#234894

FOREIGN & COLONIAL EDITION.] [Printed on Thin Paper

# THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

TELEGRAPHIC ADDRESS—LANCET, WESTRAND LONDON TELEPHONE NUMBER—GERRARD 5356

No. XXV. OF VOL. II. 1915.
No. 4816. Vol. CLXXXIX. LONDON, SATURDAY, DECEMBER 18, 1915. Price 6d.

**CHRISTMAS DAY occurring next week, THE LANCET will be published on Thursday.**

72nd Annual Issue. NOW READY. 2119 pages. 15s. net Postage 8d.

THE MEDICAL DIRECTORY, 1916.

LONDON. PROVINCES. WALES. SCOTLAND. IRELAND. ABROAD. NAVY & ARMY. DENTAL SURGEONS.

*"The authoritative work of reference on all matters relating to the medical profession."*—THE TIMES.

London: J. & A. Churchill, 7, Great Marlborough-street.

NOW READY. IN THE OLD NOMENCLATURE.

THIRD EDITION. COMPLETE IN ONE VOLUME.

BUCHANAN'S ANATOMY.

SYSTEMATIC and PRACTICAL, including EMBRYOLOGY.

Revised Throughout and in many parts rewritten.

Pp. 1755. With 675 Illustrations, mostly in Colours. Price 21s. net.

"For the benefit of students who find a difficulty in obtaining up-to-date works in the old terminology, we wish to bring to their notice Buchanan's Anatomy. ... .. Buchanan's Anatomy is not quite so large as Gray's or Cunningham's, and it is written on rather a different basis, being dealt with in special sections. This makes it a very useful book to work with ..... and though it is rather smaller than the other large text-books, it is more concise and more easy of digestion."
—ST. BARTHOLOMEW'S HOSPITAL JOURNAL.

London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

NEARLY READY. With 150 Illustrations.

By CHARLES J. HEATH, F.R.C.S. Eng.,
Late Surgeon to the Hospital for Diseases of the Throat, Golden-square, London.

AURAL SUPPURATION:
ITS ARREST, WITH PRESERVATION OF THE HEARING.

*The indications for performance of the Author's conservative mastoid operation.*

London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

By J. S. KELLETT SMITH, F.R.C.S. Eng.

LATERAL SPINAL CURVATURE AND
FLAT FOOT, AND THEIR TREATMENT BY EXERCISES.

"An excellent and most useful manual."—NEW YORK MED. RECORD.

Contains a detailed and fully illustrated account of the "creeping" exercises. 82 Illustrations. 5s. 6d. net. Wright, Bristol.

J. W. THOMSON WALKER, M.B., C.M.Edin.,
F.R.C.S. Eng.

SURGICAL DISEASES AND INJURIES OF THE GENITO-URINARY ORGANS.

880 pages, 24 Colour and 21 Black-and-White Plates and 279 Illustrations in the Text. Price 25s. net.

"Will hold its place for many years as the best English text-book of the subject."—BRITISH JOURNAL OF SURGERY.

Cassell & Co., La Belle Sauvage, London, E.C.

8vo, 12s. 6d. net. Stereoscope, 2s. 6d. net.

RHINOLOGY: A TEXT-BOOK OF THE DISEASES OF THE NOSE AND ACCESSORY SINUSES.
47 Plates and 146 Illustrations.
By P. WATSON-WILLIAMS, M.D. Lond.,
Lecturer on Diseases of Ear, Nose and Throat, University of Bristol, and in Charge of Ear, Nose and Throat Department, Bristol Royal Infirmary.
Longmans, Green & Co., 39, Paternoster-row, London, E.C.

Crown 8vo. 272 pages. Illustrated. Cloth. Price 3s. 6d. net; postage 5d.

NUTRITION: A GUIDE TO FOOD & DIETING.
By CHARLES H. SOHN, F.I.C., F.C.S.
Henry Kimpton, 263, High Holborn, London, W.C.

Royal 8vo. 838 pages 860 Illustrations. Cloth. Price 31s. 6d. net.

FRACTURES AND DISLOCATIONS:
DIAGNOSIS & TREATMENT. By MILLER E. PRESTON, M.D.
Henry Kimpton, 263, High Holborn, London, W.C.

LEWIS'S CIRCULATING LIBRARY.

ALL BRANCHES of MEDICAL and SCIENTIFIC LITERATURE.

*Telephone: Museum 1072.*

Annual Subscription from One Guinea.

*IMPORTANT NOTICE.*

CHRISTMAS HOLIDAYS, 1915. All Departments will CLOSE FROM 1 P.M., FRIDAY, DECEMBER 24TH, TO 9 A.M., TUESDAY, DECEMBER 28TH.

London: H. K. Lewis & Co. Ltd., Publishers and Booksellers, 136 Gower Street and 24 Gower Place, W.C.

FREYER'S ENLARGEMENT of the PROSTATE. With a Description of the Author's Operation of Total Enucleation of the Organ. A Work based on 800 Cases of the Operation. THIRD EDITION. With 54 Illustrations. Price 6s. net.
SURGICAL DISEASES OF THE URINARY ORGANS. With 141 Illustrations. Price 12s. 6d. net.
Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden, London.

A POST-GRADUATE COURSE FOR THE GENERAL PRACTITIONER.

THE MEDICAL CLINICS OF CHICAGO.

See Saunders' Advertisement on Page 3.

By FREDERICK J. McCANN, M.D.Edin., F.R.C.S.Eng., Surgeon, Samaritan Free Hospital for Women, London, N.W.

CANCER OF THE WOMB: ITS SYMPTOMS, DIAGNOSIS, PROGNOSIS, AND TREATMENT.
Fully Illustrated. 20s. net.

LIVERPOOL MEDICO-CHIRURGICAL JOURNAL.—"Cancer of the Womb, by F. J. McCann, is a book that can be recommended alike to the general practitioner and the specialist. Written in a fluent manner, it embodies the ripe experience of a renowned operator, trained observer, and patient investigator."

EDINBURGH MEDICAL JOURNAL.—"The book is one of very great merit; it will be read with interest both by the specialist and general practitioner as an authoritative exposition of the important subject with which it deals."

PRACTITIONER.—"Dr. McCann has produced a valuable work which deserves to be widely known."

ST. BARTHOLOMEW'S HOSPITAL JOURNAL.—"The plates are excellent. This is a book we can thoroughly recommend."

London: Henry Frowde and Hodder & Stoughton.

Royal 8vo. 252 pages. 113 Illus., 23 in Colours. Cloth. Price 18s. net.

CYSTOSCOPY AND URETHROSCOPY FOR GENERAL PRACTITIONERS. By BRANSFORD LEWIS, M.D., F.A.C.S., and ERNEST G. MARK, M.D., F.A.C.S.
Henry Kimpton, 263, High Holborn, London, W.C.

Royal 8vo. 1141 pages 1032 Illus. 7 Plates. Cloth. Price 25s. net

SURGERY: ITS PRINCIPLES AND PRACTICE.
By A. P. COOPER ASHHURST, M.D., F.A.C.S.
Henry Kimpton, 263, High Holborn, London, W.C.

Now Ready. viii. + 280 pp. Price 5s. net. With original Photographs and 143 special Prescriptions.

TREATMENT OF DISEASES OF THE SKIN.
By KNOWSLEY SIBLEY, M.D. Camb.
London: Edward Arnold, 41 and 43, Maddox-street, W.

FOURTH EDITION. JUST PUBLISHED.
8vo. Pp. 260. With 40 Illustrations. Cloth. 6s. net.

SQUINT: its Causes, Pathology and Treatment.
By CLAUD WORTH, F.R.C.S.,
Surgeon, Royal London Ophthalmic Hospital (Moorfields), &c.
Bale, Sons & Danielsson, 83, Gt. Titchfield-street, W.

Pp. viii. + 282, with 51 Illustrations. Price 7s. 6d. net.

DISORDERS OF THE HEART.
By ALEXANDER MORISON, M.D., F.R.C.P.,
Senior Physician to the Great Northern Central Hospital, &c.
Baillière, Tindall & Cox, 8, Henrietta street, Covent Garden, London.

1/- PER TABLET

# 3% BINIODIDE MERCURIAL SOAP

THIS IS WITHOUT DOUBT THE MOST POWERFUL GERMICIDAL SOAP MADE.

Surgeons and Gynæcologists who carry this soap find that they need not carry Mercuric Unguents.

EACH TABLET BEARS A 3d. GOVERNMENT STAMP.

## EDWARD COOK & Co., Ltd., Bow, LONDON, E.

## Valentine's Meat-Juice

For **Quieting** the **Irritable Stomach**, for **Aiding** the **Digestion** and for **Sustaining** and **Strengthening, Valentine's Meat-Juice** is **Extensively Employed** in the treatment of

**Phthisis.**

**Dr. Gouel,** *Physician in Chief of the Villepinte Hospital for Consumption, Paris, France:* "VALENTINE'S MEAT-JUICE succeeds well in cases of Anæmia and in the treatment of Tuberculosis in an advanced stage when the stomach is intolerant."

**Dr. Pietro Borromeo,** *Physician and Surgeon of the Hospital of Rome, Italy:* "I have tried VALENTINE'S MEAT-JUICE in the Tuberculosis Division of the Hospital of the Holy Spirit, and have proved the great advantages that it renders for the nutrition of the consumptive. Pleasant to the taste of the most fastidious of the sick, it does not irritate the stomach, but stimulates the peptogastric functions so as to improve notably the appetite, even in cases of continuous and high fever and of extreme loss of strength."

For sale by European and American Chemists and Druggists.

**VALENTINE'S MEAT-JUICE COMPANY.**

**RICHMOND, VIRGINIA, U. S. A.**

D 186

# THE LANCET.

No. 4816. LONDON, SATURDAY, DECEMBER 18, 1915. Vol. CLXXXIX.

## CONTENTS.

*The whole of the literary matter in THE LANCET is copyright.*

NOTES on the Superstitions of Menstruation. Read before the Historical Section of the Royal Society of Medicine on Dec. 15th, 1915. by RAYMOND CRAWFURD, M.A., M.D.Oxon., F.R.C.P. Lond., Physician to King's College Hospital and King George's Military Hospital; Fellow of King's College, London, &c. ..... 1331

**ORIGINAL ARTICLES.**

The Early Operative Treatment of Gunshot Wounds of the Alimentary Canal. By CUTHBERT WALLACE, B.S. Lond., F.R.C.S. Eng., Consulting Surgeon to the Expeditionary Force in France.—(*Illustrated*) ..... 1338

Responsibility for Crime. By Sir BRYAN DONKIN, M.D. Oxon., F.R.C.P.Lond., late one of H.M. Commissioners of Prisons ..... 1346

The Incidence of Renal Retinitis in Soldiers Suffering from Epidemic Nephritis. By R. FOSTER MOORE, M.A., B.C.Cantab., F.R.C.S.Eng., Assistant Surgeon, Royal London Ophthalmic Hospital; Chief Assistant, Ophthalmic Department, St. Bartholomew's Hospital ..... 1348

**CLINICAL NOTES:**

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

Bullet Wound of the Œsophagus. By A. W. NUTHALL, F.R.C.S. Eng., Captain, R.A.M.C. (T.) ..... 1350

Subcutaneous Injection of Distilled Water for Multiple Ulcers. By G. ARBOUR STEPHENS, M.D., B.S., B.Sc. Lond. ..... 1351

**MEDICAL SOCIETIES.**

ROYAL SOCIETY OF MEDICINE:

SECTION OF LARYNGOLOGY: Tracheitis Sicca.—Histology of a Nasopharyngeal Fibroma.—Exhibition of Cases and Specimens ..... 1351

**REVIEWS AND NOTICES OF BOOKS.**

The Biology and Treatment of Venereal Diseases and the Biology of Inflammation and its Relationship to Malignant Disease. By J. E. R. McDonagh, F.R.C.S.Eng. ... 1352

A Text-book of Surgery. By Richard Warren, M.D., M.Ch.Oxon., F.R.C.S.Eng. .. 1352

A Manual for Health Officers. By J. Scott MacNutt, A.B., S.B. With a Foreword by William T. Sedgwick. First edition ..... 1353

Manual of Embryology. By A. Melville Paterson, M.D. Edin., F.R.C.S.Eng. ..... 1354

Lectures on Elementary Anatomy and Physiology, including Short Sketches of Biology, Embryology, and Comparative Anatomy. By H. Clifford Barclay, M.D., Ch.B.N.Z., F.R.C.S. Edin., M.R.C.S., L.R.C.P. Lond. Second edition ..... 1354

Miscellaneous Volumes ..... 1354

Current German Medicine ..... 1355

**LEADING ARTICLES.**

THE NOTIFICATION OF MEASLES AND GERMAN MEASLES ..... 1357

INCOMPATIBILITIES ..... 1358

THE COÖRDINATION OF RECRUITING FOR THE MILITARY MEDICAL SERVICES .... 1359

**ANNOTATIONS.**

Phthisis and the Manufacture of Boots ..... 1359

Crime and Legal Insanity ..... 1360

A Shrapnel Bullet in the Bladder ..... 1360

Infantile Mortality in the Philippines ..... 1361

The Treatment of Cerebro-spinal Syphilis by Mercurialised Serum ..... 1361

Chicken Cholera ..... 1362

The Metropolitan Water-supply ..... 1362

**PUBLIC HEALTH.**

Annual Reports of Medical Officers of Health ..... 1363

VITAL STATISTICS:

Health of English Towns ... 1363
Health of Scotch Towns ... 1364
Health of Irish Towns..... 1364
Vital Statistics of London during November, 1915 ... 1364
Analysis of Sickness and Mortality Statistics in London during November, 1915 ..... 1365

**SPECIAL ARTICLES.**

The National Insurance Act: The New Regulations.—Kerts Insurance Committee.—Northumberland Insurance Committee.—Berkshire Insurance Committee and Soldiers and Sailors.—Devon Insurance Committee and Tuberculous Patients.—Bristol Insurance Committee 1355

The Services ..... 1365

Switzerland.—L'Affaire Sauerbruch ..... 1367

**CORRESPONDENCE.**

Cold-bite + Muscle-Inertia = Trench-foot (Sir William Osler) ..... 1368

"Trench Fever" (Colonel Mathew D. O'Connell, R.A.M.C. (ret.), Captain G.H. Hunt, R.A.M.C. (T.), Major A. C. Rankin, C.A.M.C.) ..... 1368

Massage and the War (Captain E. Bellis Clayton, R.A.M.C. (T.) ..... 1369

Paratyphoid (Captain G. Dreyer, R.A.M.C., Captain J. A. Torrens, R.A.M.C., Mr. A. E. Little) ..... 1369

The Shortage of Dental Practitioners ..... 1371

Illumination in Operations (Dr. Samuel Samuel) ..... 1371

Professor C. A. Ewald (Sir Clifford Allbutt) ..... 1372

Stomoxys Calcitrans as a Carrier of the Virus of Poliomyelitis (Dr. J. T. C. Nash) ..... 1372

Charas ..... 1382

**THE WAR.**

The Casualty List ..... 1373

Deaths among the Sons of Medical Men ..... 1373

Coördination of Recruiting for Military Services and the Needs of the Civilian Population ..... 1373

Medical Students and Recruiting Canvassers ..... 1374

British Red Cross Society and the Order of St. John of Jerusalem ..... 1375

The Welsh General Hospital .. 1375

Outposts for Relief Work in France ..... 1375

Science and the Health of Armies ..... 1375

Federated Malay States Hospital ..... 1375

Case record Cards for Military Cases at Health Resorts ... 1375

Gazette of the Third London General Hospital ..... 1375

New Hospitals and Wards ..... 1375

OBITUARY OF THE WAR:

Arthur Kellas, M.B., Ch.B., D.P.H. Aberd., Major, R.A.M.C.—(*With Portrait*) 1376

Maurice Mackenzie, M.R.C.S., L.R.C.P.Lond., Lieutenant, R.A.M.C.—(*With Portrait*) ..... 1376

Francis Shingleton Smith, B.A., B.C. Cantab., M.R.C.S., L.R.C.P.Lond., Captain, I.M.S.—(*With Portrait*) ..... 1376

John Cunningham Bell, M.R.C.S., L.R.C.P.Lond., Lieutenant, R.A.M.C.—(*With Portrait*) ..... 1377

Alexander Aitken Ross, M.B., C.M. Edin., Lieutenant Colonel, R.A.M.C.—(*With Portrait*) ..... 1377

Francis Joseph Wisely, B.A. R.U.I., M.B., B.Ch. Belf., Lieutenant, R.A.M.C. ..... 1377

**OBITUARY.**

George Walter Steeves, B.A. New Brun., M.D. Brux., M.R.C.S. ..... 1372

Francis Thomas Heuston, M.D. R.U.I., F.R.C.S.Irel... 1373

**MEDICAL NEWS.**

Cornwall County Asylum ..... 1346

The late Dr. Nicholas Percy Marsh ..... 1346

Precautions against Fire at Christmas Entertainments.. 1360

National Clean Milk Society... 1360

Presentation to a Medical Man ..... 1361

A Jewish Benefactor of Poor Children ..... 1356

Dartmoor Nursing Association 1373

Royal College of Surgeons of England: Pass list.—Dental Licences conferred ..... 1377

University of Liverpool: Pass-list ..... 1378

Royal Medical Benevolent Fund ..... 1378

A Devonshire Centenarian..... 1378

Sewage Disposal at Exeter..... 1378

A Domestic Economy Exhibition ..... 1378

Livingstone College ..... 1378

Milk and Insanitary Surroundings ..... 1379

**PARLIAMENTARY INTELLIGENCE.**

House of Commons: Frost-bite at the Front.—Dentists in the Army.—Diseases connected with Picric Acid.—Varnish Fumes in Aeroplane Manufacture.—Medical Benefit Regulations.—The Drug Tariff.—Scottish and Irish Insurance Commissioners.—Eyesight of Recruits.—Sterilised Tuberculous Meat.—Medical Students.—American Medical Men and the British Army.—Reports on Military Hospital Work.—The Royal Army Medical Corps.—Scottish Chemists and the Drug Tariff ..... 1379

Books, &c., received ..... 1380

Appointments ..... 1381

Vacancies ..... 1381

Births, Marriages, and Deaths 1381

Notes, Short Comments, and Answers to Correspondents.. 1382

Medical Diary ..... 1382

Meteorological Readings..... 1383

Acknowledgment of Communications received ..... 1384

**FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.**

# INDEX

## MEDICAL AND OTHER BOOKS AND PUBLICATIONS


**ARNOLD:—** PAGE
Bibley ..... Treatment of Diseases of the Skin .. Cover 1

**BAILLIERE, TINDALL & COX:—**
Bigg..... Indigestion ..... 5
" ..... War Diseases (Typhus, Enteric, Dysentery, and Cholera) ..... 5
Buchanan's Anatomy ..... Cover 1
Freyer .... Enlargement of the Prostate .... Cover 1
" .... Surgical Diseases of the Urinary Organs Cover 1
Heath..... Aural Suppuration: Its Arrest, with Preservation of the Hearing .... Cover 1
Morison.... Disorders of Heart Cover 1

**BALE, SONS & DANIELSSON:—**
Worth .... Squint: its Causes, Pathology and Treatment .. Cover 1

**CASSELL & CO.:—** PAGE
Walker .... Surgical Diseases and Injuries of Genito-Urinary Organs Cover 1

**CHURCHILL, J. & A.:—**
The Medical Directory, 1918 Cover 1

**FROWDE AND HODDER & STOUGHTON:—**
McCann .. Cancer of the Womb: Its Symptoms, Diagnosis, Prognosis, & Treatment .. Cover 1
Waring .... Surgical Diseases of the Gall Bladder, Bile Ducts, & Liver 5
" .... Manual of Operative Surgery ..... 5

**GLAISHER:—**
West ..... Granular Kidney and Physiological Albuminuria ..... 5

**HILTON & CO.:—**
Ghosh & Das ..... Hygiene and Public Health, with special reference to the Tropics ..... 5

**KIMPTON:—** PAGE
Ashhurst .. Surgery: its Principles and Practice Cover 1
Lewis & Mark .... Cystoscopy and Urethroscopy for General Practitioners ..... Cover 1
Preston .... Fractures and Dislocations .... Cover 1
Sohn ..... Nutrition: A Guide to Food and Dieting ..... Cover 1

**LONGMANS, GREEN & CO.:—**
Watson-Williams. Rhinology: A Textbook of the Diseases of the Nose and Accessory Sinuses Cover 1

**MEDICAL PUBLISHING CO.:—**
Lane, Sir A. .... Operative Treatment of Fractures ..... 5

**MURRAY:—** PAGE
Brunton, Sir L. .... Therapeutics of the Circulation ..... 5

**SAUNDERS COMPANY:—**
Medical Clinics of Chicago ..... 3
The Medical Clinics of Chicago Cover 1

**WRIGHT & SONS (BRISTOL):—**
Smith ..... Lateral Spinal Curvature and Flat Foot, and their Treatment by Exercises Cover 1

**MEDICAL LIBRARIES, &c.:—**
Baker, Birmingham—Books ..... 5
Behnke—Stammering, Lisping, and Cleft-Palate Speech ..... 5
Ketley—Stammering..... 5
Lewis's Circulating Library Cover 1
Matthews—Wood: Application of Trusses to Hernia ..... 5


## OFFICIAL AND GENERAL ANNOUNCEMENTS


**APPOINTMENTS VACANT:—**
Ancoats Hospital, Manchester .. 49
Bedford County Hospital ..... 49
Bolton Infirmary and Dispensary ..... 49
Borough Hospital, Birkenhead .. 49
Bristol Royal Infirmary ..... 49
Chesterfield and North Derbyshire Hospital ..... 48
City of Birmingham Education Committee ..... 50
City Fever Hospital, Birmingham 49
County Borough of East Ham Education Committee ..... 49
Derbyshire Hospital for Sick Children ..... 49
Derbyshire Royal Infirmary ..... 50
2/1st East Lancashire Field Ambulance..... 50
Elder Dempster & Co., Liverpool.. 50
Government of the Commonwealth of Australia ..... 50
3/1st Home Counties Field Ambulance..... 50
Hospital for Sick Children, Great Ormond-street ..... 49
Hulme Dispensary, Manchester .. 49
Leeds Public Dispensary ..... 49
Metropolitan Asylums Board—The Downs Sanatorium ..... 50
Norwich Poor Law Infirmary ..... 49
Putney Hospital ..... 49
Queen's Hospital for Children, Bethnal Green ..... 50
Royal Albert Edward Infirmary and Dispensary, Wigan ..... 49
Royal Eye Hospital, Southwark .. 49
Royal Infirmary, Sheffield ..... 50
Royal Victoria Infirmary, Newcastle upon Tyne ..... 49
St. Marylebone Infirmary ..... 50
St. Pancras Dispensary, Oakley square ..... 50
Shrewsbury Dispensary ..... 50
Tunbridge Wells General Hospital ..... 50
Wessex Field Ambulances ..... 50

**ASSISTANCIES, MEDICAL:—**
Arnold & Sons, Giltspur-street... 51
Baldwin, South Mimms ..... 51
Buck & Sweetnam, Manchester .. 51
No. 671, L.O., Strand ..... 51
No. 673, L.O., Strand ..... 51
No. 674, L.O., Strand ..... 51
No. 675, L.O., Strand ..... 51
No. 676, L.O., Strand ..... 51
No. 678, L.O., Strand ..... 51
Turner, Adam-street ..... 50
X. Y. Z., Boscombe ..... 51

**ASYLUMS, HOMES, &c.:—**
Abbotswood House, Cinderford .. 48
Ashwood House, Kingswinford .. 43
Barnsley Hall, Bromsgrove ..... 43
Barnwood House Hospital ..... 44
Bishopstone House, Bedford..... 45
Brunton House, Lancaster ..... 43
Buntingford House Retreat, Buntingford..... 45
Camberwell House, Peckham-road 45
Capel Lodge Retreat and Sanatorium, near Folkestone ..... 46
Cheadle Royal..... 41
Clarence Lodge, Clapham Park .. 45
Colthurst House School, Alderley Edge ..... 47
Coppice, The, Nottingham ..... 44
Dalrymple House, Rickmansworth 46
Dartmoor Sanatorium ..... 46
David Lewis Colony, Alderley Edge ..... 47
Duff House, Banff..... 47
Edgar Allen Institute, Sheffield .. 43
G., Hampstead ..... 48
Ghyllwoods ..... 46
Grove House, Church Stretton.... 44
Grove, The, Catton, Norwich..... 44
Haslemere Nursing Home ..... 49
Haydock Lodge, Newton-le-Willows ..... 45
Heigham Hall, Norwich ..... 44
Home for Epileptics, Maghull .... 47
Invernith Sanatorium, Colinsburgh ..... 46
Littleton Hall, Brentwood ..... 48
London Fever Hospital..... 44
Malling Place, Kent ..... 43
Melbourne House, Leicester ..... 48
Mendip Hills Sanatorium ..... 43
Meyrick, Brighton ..... 49
Moat House, Tamworth ..... 44
Newmains Retreat, Lanarkshire.. 48
Nordrach-on-Dee, Banchory ..... 47
Northumberland House, Finsbury Park ..... 43
Northwoods House, Winterbourne 45
No. 381, L.O., Strand ..... 48
No. 412, L.O., Strand ..... 48
No. 617, L.O., Strand ..... 49
Peckham House..... 45
Pendyffryn Hall Sanatorium, Nordrach-in-Wales ..... 47
Plympton House, Plympton ..... 41
Portsmouth Corporation Mental Hospital ..... 45
Ravenscroft House, Golders Green 48
St. Andrew's Hospital, Dollis Hill 49
St. Andrew's Hospital, Northampton ..... 44
St. Luke's Hospital for Mental Diseases ..... 45

**ASYLUMS—(Continued).**
St. Raphaels, Buxted, Sussex .... 45
Shaftesbury House, Formby-by-the-Sea..... 45
Springfield House Private Asylum, Bedford ..... 45
Stretton House, Church Stretton.. 44
The General Manager, Cravenstreet ..... 48
The Grange, near Rotherham .... 44
Vale of Clwyd Sanatorium ..... 47
Warneford Asylum, Oxford..... 43
Wye House, Buxton ..... 44

**HEALTH RESORTS, BATHS, &c.—**
Cornish Riviera ..... 48
Peebles Hotel Hydro..... 48
Smedley's, Matlock ..... 48

**HOMES WANTED:—**
No. 677, L.O., Strand ..... 49
No. 677, L.O., Strand ..... 49

**HOUSE & ESTATE AGENTS—**
Owner, Chelsea ..... 52

**LIFE & FIRE ASSURANCES, &c.:—**
Medical, Sickness and Accident Society ..... 27
Prudential ..... 41

**MASSAGE:—**
London School of Massage..... 40

**MEDICAL ACCOUNTANTS, &c.:—**
Turner ..... 52

**MEDICAL AGENTS:—**
Fieldhall, Limited ..... ..
Manchester Clerical, &c., Association ..... 52
Medical Agency ..... 52
Moore & Co. ..... 50
Needes, Herbert ..... 52
Needes, J. C. ..... 52
Peacock & Hadley ..... 52
Turner ..... 52

**MEDICAL SCHOOLS:—**
(LONDON.)
London School of Clinical Medicine ..... 40
West London Post-Graduate College ..... 40

**NURSING INSTITUTES:—**
Co-operation of Temperance Male and Female Nurses ..... 42
General Nursing Association .... 43
Hospital for Sick Children, Great Ormond-street ..... 41

**NURSING INST.—(Continued).**
London Nurses' Association ..... 42
London Temperance Male and Female Nurses Co-operation .. 42
Male Nurses Temperance Co-operation ..... 41
Mental Nurses Association ..... 41
Mental Nurses' Co-operation .... 41
New Mental Nurses' Co-operation ..... 41
Nurses' Co-operation, Portland-place ..... 41
Registered Nurses' Society ..... 41
St. John's House ..... 41
St. Luke's Hospital, E.C..... 43
Temperance Association of Male Nurses, Ltd..... 42
Temperance Male Nurses Co-operation ..... 42
The Retreat, York ..... 42

**OFFICIAL NOTICES:—**
City of London Lying-in Hospital ..... 40
London School of Tropical Medicine ..... 40
Middlesex Hosp. Medical School.. 40
Queen Charlotte's Lying-in Hospital ..... 40
Royal College of Surgeons of England ..... 40
Royal Institute of Public Health.. 40
The Murdoch Trust..... 40
University of Cambridge ..... 40
University of London—Brown Animal Sanatory Institution .. 40
York-road General Lying-in Hospital, Lambeth ..... 40

**PARTNERSHIPS & PRACTICES:—**
Arnold & Sons, Giltspur-street.... 51
Lee & Martin, Birmingham ..... 51
Manchester Clerical, Medical and Scholastic Association ..... 51
No. 649, L.O., Strand ..... 51
No. 652, L.O., Strand ..... 52
No. 670, L.O., Strand ..... 51
Turner, Adam-street ..... 51

**RAILWAY & STEAMSHIP CO.'S.:—**
New Zealand Shipping Co..... 41

**SCHOOLS, PREPARATORY, &c.:—**
Paton, Cannon street..... 40

**TUTORS & LECTURERS:—**
Beckton ..... 40
Dexter..... 40
Schnelle—Stammering ..... 5
Weymouth ..... 41


*For Index to Trade and Miscellaneous Advertisements see page 4.*

# Notes
ON THE
# SUPERSTITIONS OF MENSTRUATION.

*Read before the Historical Section of the Royal Society of Medicine, on Dec. 15th, 1915,*

By RAYMOND CRAWFURD, M.A., M.D.Oxon., F.R.C.P. Lond.,

PHYSICIAN TO KING'S COLLEGE HOSPITAL AND KING GEORGE'S MILITARY HOSPITAL; FELLOW OF KING'S COLLEGE, LONDON, ETC.

SUPERSTITIONS concerning the menses loom so large in the customs of primitive peoples and are so far from extinct among the lower orders of civilised nations as to be worthy of serious consideration. Many a farmer's wife in this country will still assure you that milk handled by a menstruous woman cannot be churned to butter or that hams will not take salt at her hands. That she has demonstrated the contrary in a series of experiments, month by month, year in and year out, has left unshaken the pillars of her faith: the foundations of faith stand firm in shifting soil.

## ANCIENT VIEWS ON MENSTRUATION.

The wise men of old stood baffled before the mystery of the menses. Pythagoras called menstrual blood the froth of the blood, and held that it contained the superfluity of the aliment. Aristotle explained menstruation as a process necessary to get rid of the excess (*περίττωμα*) of blood that had accumulated in the interior of the body of the woman, and his theory is ardently supported 1500 years later by his great commentator Averrhoes. Can it be honestly said that, apart from some suggestive evidence as to the interdependence of ovarian activity and catamenial function, medicine of to-day has any more satisfying explanation of the purpose of menstruation than theirs?

Where science has failed to establish a proof religion has seldom failed to establish a theory. The Levitical ritual was in no doubt that impurities collected in the woman's blood were discharged in the menstrual flux, so that she underwent a recurring series of purifications. To the men of the monasteries menstruation was a symbol of the essential sinfulness and inferiority of woman, polluted alike and polluting. Men of such widely different stamp as Paracelsus and de Graaf both upheld this view of a menstrual purification, and I seem to hear some echo of it in the modern suggestion that the uterine mucosa, by expulsion of its surface layer, is preparing a sterilised bed for the fertilised ovum. Laboriously acquired histological knowledge competes on unequal terms with a plausible bacteriological preconception.

It must be remembered that till the middle of the seventeenth century, when the work of Harvey, de Graaf, and other pioneer embryologists led up to the discovery of the ovum in the human female, it was generally believed that the male semen and the female menses were the constituents out of which the child was formed, and by most the leading part was assigned to the menses. Pliny[1] defines the general belief in quite unequivocal language:—

> The discharge, which is productive of such great and singular effects, occurs in women every thirty days, and in a greater degree every three months. In some individuals it occurs oftener than once a month, and in others again it never takes place. Women of this nature, however, are incapable of bearing children, because it is of this substance that the infant is formed. The seed of the male, acting as a sort of leaven, causes it to unite and assume a form, and in due time it acquires life and assumes a bodily shape.

We see how it came about that Aristotle applied to the menses the self-same explanation of a superfluity, that Hippocrates had adopted in the case of the male semen.

## MAGICAL BELIEFS.

Back of all these scientific and religious theories, and not infrequently casting a shadow upon them, stands a congeries of magical beliefs, which constitute the main subject of our present inquiry. The menstruous woman is possessed by an evil spirit; the spirit resides in her blood, and by the medium of her menstrual blood may exert its influence, for good or for harm, on her environment. The evil spirit may effect its entry into the woman in the form of a bird, or a lizard, or a serpent; hence the folk association of these animals with menstruation. It was the serpent that marred the primordial bliss of Eden. In Portugal women during menstruation wear drawers to prevent the access of lizards. On the Pennefather river the menses are said to be produced by a curlew operating on woman.

It is of the nature of magic, having postulated an all-sufficing cause, to take but little account of the intervening steps in the production of its effect. But in the matter of menstruation it has not been wholly silent. The natives on the Tully river in North Queensland[2] attribute it to the breaking and discharge of the liver; what causes the breakage they do not know, but believe that menstruation has nothing to do with pregnancy. They are so far right in this that it is quite certain repeated pregnancy may occur in those who have never menstruated. Segregation of women from the men during menstruation would lend colour to the belief that menstruation is not necessarily connected with conception. Among the Sandwich Islanders menstruation is believed to be the result of coition.

## SUPERSTITIONS CONNECTED WITH THE MILK-SUPPLY.

Many superstitions centre around the milk-supply; much light has been thrown upon them by the masterly handling of Frazer.[3] Among the kaffir tribes of South Africa the menstruous woman must not drink milk, for if she do the cows would die. Even the maidens who attend a girl at her first menstruation are forbidden to drink milk for the same reason. Seclusion of the woman from the cattle and the taboo on milk last a fortnight, double the period demanded in the case of many other prohibitions.

Among the Bahimas a woman may not drink milk at her monthly times, but must eat vegetables and drink beer; the vegetarian diet implies a taboo on the flesh of the animals that yield the milk. Exception is made in favour of a girl at her first menstruation; her father then sets apart for her use an old cow, which is of small value, as it will soon pass out of milk. The conception that underlies these prohibitions is that of a sympathetic bond between the cow and its milk, which abides after the milk has left its body. Harm done to the milk inevitably involves the cow.

Again a menstruous woman is forbidden to cross those parts of the kraal frequented by the cattle, for if a drop of blood were to fall on such a path

any cow passing over it would run great risk of dying from disease. The huts of a kaffir kraal are usually arranged in a circle with the cattle-fold in the centre, and the circuitous paths taken by the women, in passing from hut to hut, may be seen outside the circle of huts, between them and the palisade which sometimes surrounds the kraal; but there is no such restriction on the walks of women who are past child-bearing, as they have ceased to be a source of danger. Nor is it only menstrual blood that is feared, for a Zulu custom forbids a wounded man to drink milk until he has submitted to a prescribed ritual.

Among many pastoral tribes of South Africa and India, women are either entirely prohibited from milking the cows, or are permitted to do so only in accordance with certain strict rules of ceremonial purification. Among the Todas of South India the men alone undertake the operations of milking and churning. The women may go to the dairy to fetch butter-milk, but they must approach it by an appointed path and stand at an appointed place to receive the milk. Such scrupulous care to shield the cattle and their milk from harm is commensurate with their importance in the economy of a pastoral people. It is interesting to encounter these primitive attempts at the provision of a pure milk-supply, and to consider the different character of the impurities to be feared, then and now.

### BELIEFS ABOUT THE CROPS.

Superstitions such as we have already cited are in the nature of things most prevalent among the unsophisticated children of the soil, and wear a rural aspect. Others centre about the crops. Thus Pliny[4] says:—

> If a woman strips herself naked while she is menstruating and walks round a field of wheat, the caterpillars, worms, beetles, and other vermin will fall off from the ears of corn. Metrodorus, of Scepsos, tells us that the discovery was first made in Cappadocia, and that, in consequence of such multitudes of cantharides being found to breed there, it is the practice for women to walk through the middle of the fields with their garments tucked up above the thighs. In other places again it is the usage for women to go barefoot, with the hair dishevelled and the girdle loose; due precaution must be taken, however, that this is not done at sunrise, for, if so, the crop would wither and dry up.

Columella and Aelian both testify to the efficacy of this procedure, which finds a modern echo in Hiawatha's[5] injunction to Minnehaha:—

> You shall bless to-night the cornfields,
> Draw a magic circle round them
> To protect them from destruction,
> Blast of mildew, blight of insect.
> In the night, when all is darkness,
> Rise up from your bed in silence,
> Lay aside your garments wholly,
> Walk around the fields you planted,
> Round the borders of the cornfields,
> Covered with your tresses only,
> Robed with darkness as a garment.

For the most part, however, the influence of the menstruous woman on vegetation is harmful. According to Pliny—

> Seeds which are touched by her become sterile, grafts wither away, garden plants are parched up, and the fruit will fall from the tree beneath which she sits.[6]
>
> Young vines, too, it is said, are injured irremediably by the touch of a woman in this state; and both rue and ivy, plants possessed of highly medicinal virtues, will die instantly upon being touched by her.[7]
>
> All plants will turn of a yellow complexion on the approach of a woman who has the menstrual discharge upon her.[8]

Frazer says that in Galela women at their monthly periods may not enter a tobacco field, and in Sumatra they are forbidden the rice fields for fear of damaging the crop. At Saigon no woman is employed in the opium factory lest she should turn the opium bitter, while Annamese women say that it is very difficult for them to prepare opium pipes during the catamenial period.[9] Even the lowlier forms of life are activated by this uncanny influence, so that beer and wine turn sour and vinegar will not keep. Clearly in this state she must be secluded from the food-supply. We have seen that she is forbidden to take milk or meat at these times for fear of damaging the flocks. Some Central Australian[10] tribes will not allow a menstruous woman to gather a certain bulb, which is a staple food, for fear the crop of bulbs should fail. Again, no woman was formerly admitted to the great sugar refineries in the North of France during the boiling or cooling processes on the ground that the sugar would blacken if a woman were to enter during her period.[11] In Syria to this day women are not allowed to salt or pickle when their courses are on them, as it is believed that whatever they salt or pickle will not keep; and in Brunswick people think that if a menstruous woman assists at the killing of a pig the flesh will putrefy.[12]

### MALIGN INFLUENCE ON ANIMAL LIFE.

With an ever-widening circumference the malign influence affects all living things about the homestead. Bees will forsake their hives at her touch, for they have a special aversion to a thief and a menstruous woman, and a glance of her eyes suffices to kill a swarm of bees (Pliny).[13] Among the Indians an Omaha[14] woman may not approach a horse during her courses or she will grievously harm the animal. Pliny says:—

> A mare big with foal, if touched by a woman in this state, will be sure to miscarry; nay, even more than this, at the very sight of a woman, though seen even at a distance, should she happen to be menstruating for the first time after the loss of her virginity, or for the first time while in a state of virginity. So pernicious are the properties of the menstrual discharge that women themselves, the source from which it is derived, are far from being proof against its effects: a pregnant woman, for instance, if touched with it, or if indeed she so much as steps over it, will be liable to miscarry.[15]

Pliny further records its value as an ingredient of abortifacient remedies and as a means of preventing impregnation. We have the recent testimony of Dr. T. G. Morton,[16] of Philadelphia, that ignorant female abortionists still vend a nostrum for defeating pregnancy, one of the component parts of which is catamenial fluid. That it should possess this powerful ecbolic faculty is a mere matter of sympathetic influence, and for the same reason—

> Reduced to ashes and mixed with oil of roses it is very useful; applied to the forehead, for allaying headache, particularly in women (Pliny).[17]
>
> Dogs which may have tasted of the matter so discharged are seized with madness, and their bite is venomous and incurable.[18]

And again in a later passage Pliny says:—

> It is universally agreed that, when a person has been bitten by a dog and manifests a dread of water and of all kinds of drink, it will be quite sufficient to put under his cup a strip of cloth that has been dipped in this fluid, the result being that hydrophobia will immediately disappear. This arises, no doubt, from that powerful sympathy which has been so much spoken of by the Greeks, and the existence of which is proved by the fact already mentioned, that dogs become mad on tasting this fluid.[19]

Yet one more instance may be taken from Pliny of its influence on animal life:—

That the ant, an insect so extremely minute, is sensible of its presence and rejects the grains, which it has been carrying, and will not return to them again.[20]

### OTHER PHENOMENA ATTRIBUTED TO THE CATAMENIAL STATE.

Household articles enjoy no immunity. Aristotle says that the glance of a menstruous woman takes the polish out of a mirror and that the next person looking into it will be bewitched. Pliny says that the tarnished mirror will recover its brightness if the same woman looks steadily upon the back of it. Her glance also blunts the edge of steel and takes away the polish from ivory. Lausent[21] enumerates a whole catalogue of uncanny phenomena attributed to the catamenial state. Two girls believed that their shoes, stockings, and clothes stuck to them so closely that they needed help to remove them. There are many tales of the snapping of strings of harps and violins during the menses; also of the readiness with which women break things at these times, needles snapping, glasses breaking, and clocks stopping if touched. Iron will become rusty on contact with her, copper coated with verdigris, razors blunted, and linen boiling in the cauldron will turn black (Pliny[22]).

The powers of Nature even own the menstrual sway—

For in the first place hailstorms, they say, whirlwinds and lightning even will be scared away by a woman uncovering her body, while her monthly courses are upon her. The same too with all other kinds of tempestuous weather; and out at sea a storm may be lulled by a woman merely uncovering her body, even though not menstruating at the time (Pliny[22]).

Seasonal and other influences are held to heighten the virulence of the discharge. Aelian lays it down that during menstruation woman is in communication with the starry bodies. Aristotle[24] says that wiseacres assert that the moon is female, because the menstrual flux and the waning of the moon both take place towards the end of the month, and after the wane and the discharge both become whole again. According to Pliny—

If the menstrual discharge coincides with an eclipse of the moon or sun, the evils resulting from it are irremediable; and no less so, when it happens while the moon is in conjunction with the sun; congress with a woman at such a period being noxious and attended with fatal effects to the man. At this period also, the lustre of purple is tarnished by the touch of a woman, so much more baneful is her influence at this time than at any other.[23]

Virginity too exerts a special power. Pliny says that "the nature of the discharge is most virulent in females, whose virginity has been lost solely by lapse of time."[25] The first menstruation also, as well as the first after loss of virginity, possess a special potency.

### CURATIVE PROPERTIES.

Among the beneficent properties of the menstrual discharge must be ranked its power to cure various ailments. The doctrine that the various secretions and excretions are imbued with the same properties as the body from which they are liberated led to their wholesale adoption into the primitive pharmacopœia. The scatophagy, at which Aristophanes jibed, was the parent of modern organotherapy. The first napkin used by a healthy virgin was preserved for use in cases of plague, malignant carbuncles, and other diseases; it was damped with water and laid on the part; the discharge was also used as a topical application in acute gout.

The menstruating woman has the divine gift of kings, for by her touch she can cure not only scrofulous ulcers, but "imposthumes of the parotid glands, inflamed tumours, erysipelas, boils, and defluxions of the eyes."[25] Avicenna and Pliny both recommend menstrual blood as an application to all sores. In Bavaria it is held even to have prophylactic power against wounds and to be able to extinguish fires. It was given internally for erysipelas and calculi, and was esteemed a good cosmetic to drive away pimples. In the Middle Ages it was a sovereign cure for leprosy.[25]

The wise women of Pliny's day recommended it to be placed on a thread or the wool of a black sheep and worn in a bracelet as an amulet in tertian or quartan fevers. The midwife Sotira considered that better results were obtained by rubbing the soles of the patient's feet with it, and if possible this should be done by the woman herself without the patient's knowledge. She had also proved the efficacy of this method in reviving a person from an epileptic seizure. For quartan fever Ictidas, the physician, recommended sexual intercourse with a woman just beginning to menstruate. This is but one instance of the profound influence on males attributed to the menstrual state.

### CUSTOMS AMONG PRIMITIVE PEOPLES.

Among the Australian[26] blacks the boys are taught from early childhood that if they set eyes on menstruous blood their hair will turn grey and their vigour abate prematurely. Consequently, the women must live apart at these times, and if a boy or young man is seen to approach she must call out at once, so that he may avoid her; he must not even cross the tracks made by women at such times. The woman is forbidden under pain of death to touch anything that the men use or to walk on the paths they frequent. An Australian black killed his wife when he found that she had lain on his blanket during her menstrual period and died of terror within a fortnight. Among the Bhinyan of South Mirzapur every house has two doors, one of which is used exclusively by the women during menstruation. These superstitious terrors help us to appreciate the mentality of those eminent scientists who find the contiguity of a women an impediment to serious work, and who knows but that their unconscious influence may explain the trade unions hostility to the collaboration of women in the workshop.

Among the people of the Lower Congo[27] a woman, during menstruation, may not cook her husband's food nor any other man's, neither anything belonging to men, and must not return the salutations of any man. If a woman in this condition has to pass near some men who are likely to give her the equivalents of "Good morning" or "Good evening" she will deliberately put her pipe in her mouth as a sign that she cannot answer because she is unclean.

If in this state she will pollute mere man, still more will she pollute a sacred man. A menstruating Jewish woman was formerly forbidden to shake hands with a Rabbi, and women at these times were excluded from the Jewish synagogues and from the communion table of the early Christian church. The Parsees, who reverence fire, will not permit a woman then even to look on a lighted taper; in Rome, too, it was the vestal virgins who kept alive the sacred flame. Medicine men, too,

when about to compound their medicines, were in the habit of making a saving clause that the remedy would be effective, provided no menstruating woman approached their chamber during the compounding process. Surely nowadays the altogether inordinate apprehensions of both nurse and surgeon as to the evils of operation during the menstrual state are tinctured with the savour of this same superstitious fear.

Among the native Australians[28] the woman may not eat fish, or cross the water, or even go near it, or it will spoil the fishermen's luck; she may not even fetch water for the camp. Mrs. James Smith, in her account of the Roandik tribes, says that men have a special objection to setting eyes on menstrual blood, because it would enfeeble them in their fight against enemies and they would be killed; and the Aruntas[29] of Central Australia believe that a draught of woman's blood would kill the strongest man. In Polynesia the vessels, garments, and other property of a menstruating woman may not be used by others on pain of disease and death.

### LOVE CHARMS AND OTHER MAGICAL POWERS.

Menstrual fluid has always been reckoned to possess a powerful influence over the affections of men, and has held pride of place as an ingredient of the love-charms administered by girls to would-be lovers. In modern Germany girls have administered drops of menstrual blood in coffee to their sweethearts to make sure of retaining their affections—a characteristic display of "frightfulness." According to Pliny[30] its action is effective on either sex, for "if a man takes a frog and transfixes it with a reed entering its body at the sexual parts and coming out of the mouth, and then dips the reed in the menstrual discharge of his wife, she will be sure to conceive an aversion for all paramours."

Menstrual fluid has other intimate relations to magic. Thus Pliny says that if it is sprinkled on the door-posts it will render ineffectual all the spells of the magicians. Josephus speaks of plants acquiring magical properties by watering them with menstruous blood and the urine of a woman—a radio-active influence, no doubt! and by sympathetic affinity stains made on a garment by menstrual blood can only be removed by the urine of the same woman.

### THE UNDERLYING IDEA.

The idea underlying these customs is that there resides in the menstrual blood some agent powerful for good or for harm; most of all is its power over the virility of the male, enfeebling him in the fierce struggle for the survival of the fittest. The spirit of the woman resides in her blood and is transferable therewith to the male. It is a special aspect and a special application of the universal primitive blood-horror, founded on this same belief that the spirit of the person resides in his blood, and emerges with it for good or for harm. In addition, there is something unintelligible about menstruation, something uncanny, and the primitive mind explains it as due to some spiritual agency, which may harm the woman if she does not take certain precautions, and may pass from her and harm others if they neglect the prescribed precautions.

As examples of the need of self-protection, among the Tinneh Indians[31] a menstruating girl may not touch her own head with her hand, and, if it itches, she must use a stick to scratch it. In some races she is not allowed to feed herself. She must wear a fringe of shells or bones hanging from her forehead so as to cover her eyes, as she is susceptible to any malicious sorcerer at such times. Among the Carrier Indians[32] menstruous women may not cut up the grebes, which are caught in great numbers, as by sympathy their blood would cause an unnaturally prolonged flux in the transgressor. Similarly, Shushap women are forbidden, during their seclusion at puberty, to eat anything that bleeds. There are numerous instances of women refraining, during menstruation, from fish and flesh, and confining themselves to a vegetable diet for the same reason. It is probably in obedience to the dictates of sympathetic magic that the physician of to-day administers preparations of blood for the cure of amenorrhœa in place of the old and proven hæmatinics.

The ordinances of religion, with regard to the segregation of the menstruous woman, fall into line with the customs of magic. As Frazer has said, the divinely inspired law-givers mistook their own ideas for revelations from heaven.

> The Hindoo law-giver, Manu, who professed to have received his institutes from the Creator, Brahman, informs us that the wisdom, the energy, the strength, the sight, and the vitality of a man who approaches a woman in her courses will utterly perish; whereas, if he avoids her, his wisdom, energy, strength, sight, and vitality, will all increase.[33]

So, too, the Persian law-giver, Zarathustra, who claims to have derived his code from the mouth of the Supreme Being, Ahura Mazda, declares menstruation to be the work of Ahriman, the Devil, and lays down injunctions similar to those which the Hebrew law-giver Moses claimed to have derived from Jehovah.

### THE PURPOSE OF THE TABOOS.

Just as the horror of menstrual blood is merely a special aspect of the horror of blood in general, so the taboos by which it is sought to segregate the menstrual woman are but a special application of the taboos by which any other supernatural agent undergoes segregation. The purpose that underlies them all is the isolation of the tabooed person from society. The primitive mind discriminates little between good and evil spirits, between holiness and pollution, for in each condition there exists a powerful supernatural force, be it active for good or for evil. So comes it, as Frazer shows, that the same taboos as apply to the menstruous woman are applied to divine kings or priests. Thus in many primitive races the divine personage may not touch the ground with his foot, and the sun may not shine upon him. We find him carried on men's shoulders, or stepping only on carpets or mats; and in many nations confined in palace, temple, or underground dwelling: the Mikado of Japan formerly observed both these taboos. Nowhere is he so free from danger and so harmless, as suspended between heaven and earth, in contact with neither. In electrical language he is insulated. He can neither discharge his supernatural energy with harmful violence, nor can it be drained from him to the detriment of that magical power on which the well-being of his people depends.

In like manner in some tribes the menstruous woman is compelled to dwell apart in a dark hut specially prepared for her use, or even in a hole in the ground or a dark cage.[33] When confined in holes in the ground they are sometimes covered with dirt, or sand, or a shelter of branches, or with mats. Special attendants are told off to wait

upon them and supply their needs, and they may not eat any food which by sympathy would damage similar food-supplies. In some races the girls at these times screen themselves from the sun by wearing huge hats. Elsewhere they are sewn up in hammocks, as though dead, leaving only a small hole for breathing. The rules that the girl may not touch the ground nor see the sun keep her suspended between heaven and earth; she can poison neither of these great sources of life. But not only the safety of others, but her own safety is assured, if she be thus perfectly insulated. Zulu girls believe that they would shrivel to skeletons if the sun were to shine on them at puberty, and in some Brazilian tribes the girls think that a transgression of the rules would entail sores on the neck and throat. We find the same taboos as apply to menstruous girls enjoined on warriors who have shed blood, and on young warriors at the time of their first campaign. They may not feed themselves; they may not scratch their heads except with a stick, for their hands are defiled with blood, and they need protection from themselves.[34]

We have spoken of the universal horror of blood, which finds its highest expression in the lowest orders of civilisation, and which extends also to, at any rate, the herbivorous group of higher animals. This instinctive horror primitive man explains and excuses by asserting the presence of a spirit in the blood; the blood is the life. Blood is therefore taboo, and taboos all that comes in contact with it.

As one reflects on the horror of menstrual blood, which in all primitive communities has led to prohibition, sometimes under penalty of death, of sexual intercourse during the menstrual period, the question inevitably suggests itself to one's mind whether the horror may not be the parent of the prohibition. The extreme divergence that subsists between the habit of man and the habit of animals in the period of sexual intercourse can hardly have failed to puzzle each of us at one time or another. Æsthetic and hygienic considerations have come to dominate the mind of highly civilised man to such an extent that we are apt to look no further for an explanation. Yet it is just in those lowly stages of civilisation, in which æsthetic and hygienic considerations are of least account, that obedience to the prohibition is most strict; it is, indeed, a fundamental feature of savage ritual. With the development of civilisation medical writers, from Hippocrates onward, actually recommended sexual intercourse during menstruation for sterility and other ailments; and in the Middle Ages it had become so common that preachers found it necessary to warn their congregations against it.[35]

The belief, of very ancient lineage, that coitus during menstruation led to the birth of monsters was formerly very widespread. Ambroise Paré affirmed his belief, and rested it on a dictum of the non-canonical Book of Esdras, that "menstruous women shall bring forth monsters." Ancient mythology attributed the deformity of Vulcan to the union of Jupiter with Juno during her menstrual period. The Talmud went further and assigned disorders of the mind, such as epilepsy, cretinism, and insanity to the same cause. The belief is not wholly dead nowadays.

### Sexual Activity, Human and Animal.

The identity of œstrus or "heat" in animals and of menstruation in the human female admits of no doubt: it is, indeed, possible to trace many of the intervening stages by which the one has been transformed into the other. Each condition is due to ovarian activity, and comes to an end with complete removal of the ovaries and any accessory ovarian tissue; the medium of stimulation is almost certainly an internal secretion of the ovary. In each condition the changes that occur in the external and internal generative organs may be broadly described as "active congestion," and are similar in character. The congestive phenomena in the external genitals are far more marked in animals than in the human female, though occasionally marked swelling and congestion may also be seen in the latter. But in this and other points, when animals have been submitted to ages of domestic influence, there is a tendency to approximate to the human type. Domesticity has done for animals what civilisation has done for man.

Speaking generally the human female, in the absence of pregnancy, menstruates once a month throughout her sexually effective life, and is capable of conception at any time. The nearest approach to this is the case of the monkey, who has a regular series of monthly periods, as does the human female, but has a limited breeding season—i.e., a limited period during which conception is possible. Both man and monkey have developed sexual activity to a maximum, but in the matter of reproductive capacity man seems to have outstripped the monkey; thus the latter occupies a position midway between man and other animals. Mares, cows, sheep, and pigs exhibit a series of sexual periods during such limited portion of the year as constitutes their appropriate sexual season. The wild cat has one sexual season each year, but the domestic cat has three or four. The wild wolf has but one sexual period a year, but his kinsman the domestic dog has two or more sexual seasons each year. In all these animals conception is strictly limited to the sexual season. It must be remembered that the monkey, though not strictly speaking a domestic animal, has developed a high degree of domesticity of its own, and it is at least possible that the semi-erect posture may be an accessory factor in approximating its sexual features to the human.

### Sexual Season in the Human Female.

Now there is evidence that in former times the sexual season of the human female was restricted, as is the case with most mammals; indeed, it is not improbable that the original type was universal in all primitive species and consisted of a single sexual season each year. Cook noted that not more than 10 per cent. of Esquimaux women menstruated during the long winter months; and as though heightened desire were correlated to less frequent menstruation, a sexual season of great intensity set in at the first reappearance of the sun, and little else was thought of for some time afterwards. Caldwell states that the Queensland natives have a distinct sexual season in September—i.e., in spring—and that they cannot be prevailed upon to do any work for some weeks at that time of the year. Wiltshire[36] quotes authorities to show that in a lowly state of civilisation, such as exists among the women of Lapland, Greenland, the Faroe Islands, Tierra del Fuego, and the Guaranis of Paraguay menstruation takes place only at intervals of several months. He suggests that the infrequent menstruation of girls at puberty—at intervals of 3, 4, and 6 months—and the recurrence of a similar periodicity at the end of sexual life may be a reversion to a restricted ancestral type.

There is evidence also that in former ages the period during which conception was possible to the human female in each year was limited. In different countries there is a marked excess of births at some or other period of the year, and in general terms it may be stated that the tendency is for women both to commence menstruation and to bring forth children in the warmer months. Westermarck considers that the evidence points to two special seasons of sexual activity—spring and autumn—and that the activity is greatest towards the end of spring in the south of Europe and rather later in the north.

Though closely associated, conception and menstruation are separable functions and not necessarily interdependent, for conception may occur in the prolonged absence of menstruation. But statistics show an enormous preponderance of conceptions as occurring immediately after cessation of the menses, while a minimum is reached just before their commencement.

INFLUENCE OF DOMESTICATION AND CIVILISATION.

The advantage to primitive man and to wild animals of a limited sexual season is that the young may be born at the most propitious season of the year, when food is most abundant and climate most favourable. Once an artificial supply of food and of warmth is assured, independent of season, the necessity for a special season of sexual desire and a special breeding season disappears, and gives place to a type of greater frequency, regardless of season. It is just these things that domestication and civilisation afford.

Under domestication the frequency of œstrus is increased, and all the evidence goes to show that food and temperature are the chief efficient agents in producing the change. As to temperature, it is a familiar fact that in the bitch winter œstrus does not last so long as summer œstrus, and in the human female the menstrual flux is more readily established in summer than in winter. We may well look in the same direction for an explanation of the fact that, other things being equal, town-bred girls commence menstruation several months in advance of those reared in the country. Hard fare and laborious life tend to diminish the menstrual flow, while luxury and ease tend to increase it. In some parts of this country the hard-working farm girls still wear no protection during menstruation. Blood in the discharge is far more abundant in domesticated animals than in wild.

We see, then, that the circumstances of domestication and civilisation tend to an increase and a greater frequency both of œstrus and of menstruation; perhaps one other parallel condition may help us a stage further in the attempt to unravel the process of transformation. We know that in most mammals non-satisfaction of sexual desire by intercourse tends to a quicker return of heat than normal; and it may be that the greater frequency of menstruation in the human female may in part be referable to the fact that civilisation has brought it about that in the human female sexual desire is often compelled to go unsatisfied.[37]

CONCLUSION.

These general considerations, and much more besides, are a necessary prelude to any reasoned attempt to answer the question whether the universal human horror of menstrual blood may have initiated the practice of abstinence from intercourse during the menses. Give an affirmative reply and you are still little nearer a solution, for you will find yourself confronted by the puzzling fact that with some domesticated animals, notably the bitch, there is a strong tendency, not more, to reject intercourse during the period of substantial flux, some preferring the commencement, but most the actual termination of the period of heat.

*Bibliography.*—1. Nat. Hist., vii., 13. 2. Hartland: Primitive Paternity, ii., 273. 3. Folk-lore in the Old Testament; and Golden Bough. 4. Nat. Hist., xxviii., 23. 5. Longfellow: Hiawatha, Canto xiii. 6. Nat. Hist., vii., 13. 7. Ibid., xxviii., 23. 8. Ibid., xix., 57. 9. Havelock Ellis: Psychology of Sex, vol. ii. 10. Frazer: Golden Bough. 11. Havelock Ellis: Psychology of Sex, vol. ii. 12. Golden Bough, vol. iii., 302, seq. 13. Pliny: Nat. Hist., vii., 13, and xi., 15. 14. Golden Bough, Ibid. 15. Pliny: Nat. Hist., xxviii., 23. 16. Bourke: Scatologic Rites of All Nations. 17. Nat. Hist., Ibid. 18. Nat. Hist., vii., 13. 19. Ibid., xxviii., 23. 20. Ibid., vii., 13. 21. Annales des Sciences Psychiques, September-October, 1897. 22. Pliny: Nat. Hist., vii., 13. 23. Ibid., xxviii, 23. 24. Aristotle: Hist. Anim., vii., 2. 25. H. L. Strack: Der Blutaberglaube in der Menschheit, ed. 1892, pp. 14-18. 26. Frazer: Golden Bough, iii., 202. 27. Folklore, vol. xix., p. 418; J. H. Weeks: Customs of the Lower Congo People. 28. Golden Bough, i., 323. 29. Ibid., iii., 331. 30. Nat. Hist., xxiii., 13. 31. Golden Bough, i., 325. 32. Ibid., iii., 202. 33. Ibid., i., 325. 34. Ibid., iii., 208. 35. Havelock Ellis: Psychology of Sex, vol. ii. 36. Brit. Med. Jour., 1883, The Comparative Physiology of Menstruation. 37. Martin: Hirst's System of Obstetrics.

# THE EARLY OPERATIVE TREATMENT OF GUNSHOT WOUNDS OF THE ALIMENTARY CANAL.

BY CUTHBERT WALLACE, B.S. LOND., F.R.C.S. ENG.,

CONSULTING SURGEON TO THE EXPEDITIONARY FORCE IN FRANCE.

ABDOMINAL wounds have always aroused great interest not only in the professional but also in the lay mind. There has always been a tendency to demand more care for these cases than for any other class of injury. It is well, therefore, to inquire into the frequency of abdominal compared with other wounds, for in war the medical service must try to do the greatest good to the greatest number; it must not waste effort on a particular class of case to the detriment of a larger but possibly less interesting series of wounded.

*Relative Frequency of Abdominal Wounds.*

The actual number of men wounded in the abdomen will never be known. The number of abdominal wounds admitted to field ambulances and casualty clearing stations are, subject to certain error, known. The error is caused by the impossibility of accurately diagnosing a perforating wound. The numbers vary with each observer, and the surgeon who believes in the expectant treatment will be inclined to reckon as perforating, wounds which a believer in operative treatment would class as non-perforating. The following are figures taken in certain casualty clearing stations by careful observers:—

*Percentage of Abdominal Perforating Wounds to Total Wounds.*

| | |
|---|---|
| A = 1·88 per cent. | C = 0·75 per cent. |
| B = 1·5 ,, | D = 0·62 ,, |

If we take the statistics from 9 field ambulances and from 7 casualty clearing stations for a period of six months we get the following figures:—

*Percentage of Abdominal Wounds to Total Wounds.*

| | |
|---|---|
| Field ambulances ... ... ... ... | 1·92 per cent. |
| Casualty clearing stations ... ... | 0·72 ,, |

The difference is probably accounted for in two ways: 1. The mortality among abdominal cases at field ambulances is very heavy. 2. There is more time for accurate diagnosis at the casualty stations. The important fact brought out is the relatively

small number of abdominal wounds that a surgeon is called upon to treat. The above figures apply to a period in which there was a disposition to adopt a policy of non-interference. The figures have been a good deal modified since.

*Mortality of Abdominal Wounds.*

One is surrounded by all sorts of difficulties when trying to reckon the mortality, and all figures are only approximate.

Into 9 field ambulances over a period of six months there were admitted 1098 abdominal wounds, with 333 deaths—a mortality of 30·33 per cent.

Into 6 casualty clearing stations during the same period there were admitted 131 cases of perforating abdominal wounds, with 74 deaths—a mortality of 56·49 per cent.

From these figures it appears that the total mortality at the front is about 70 per cent. This figure is most probably approximately correct, as something about the same percentage is arrived at by different means of calculating. There are also deaths at the base in France and England to be added. It is not probable that there would be any large saving of life even if the patients could be transmitted within a few hours of injury to the best equipped hospital in England. From the nature of the injuries the mortality must be high.

*Influence of Position of Wound and Direction of Missile on Probable Nature of Internal Injury.*

*Regions above Transpyloric Plane.*

Antero-posterior wounds in this region are among the least serious of all abdominal penetrations. Side-to-side wounds are serious, especially if they are far back. Wounds which enter the abdomen from above downwards, which may be described as vertical wounds, are also serious.

*Epigastric wounds.* — True antero-posterior wounds in the midline are seldom seen in hospital; this is due to the fact that the aorta and vena cava lie in this region, and it is probably due to the same fact that wounds of the duodenum are so seldom met with.

On the right side the liver will be hit, on the left the stomach as well as the liver. The lesser curvature and a large portion of the right extremity of the stomach lie within this area. Wounds in this region are usually accounted as wounds of the stomach, and recovery after such a wound is often reckoned as an instance of spontaneous healing of a penetrated stomach. It may well be that such is the case, but it is possible for a bullet to traverse the left part of this region and miss this viscus. The actual operative proof of this is at present wanting, but cases have been seen in which the lesser curvature was only just involved. Wounds in this region usually involve both surfaces of the organ.

*Antero-posterior hypochondriac wounds.*—On the right the liver will be perforated, and on the left the cardia and greater curvature of the stomach. Towards the lateral line of the body the kidney will be involved on the right, and the kidney, spleen, and splenic flexure on the left. As far as the liver and stomach are concerned they are as favourable as similar wounds in the epigastric region. (Fig. 1.)

*Oblique epigastric and hypochondriac wounds.*—When the wounds are oblique from side to side no distinction can be drawn between the two regions for the projectiles traverse both. These wounds are decidedly more dangerous than the antero-posterior ones—indeed, they become more fatal as they become more oblique. On the right side a greater length of liver is traversed, and the danger of hæmorrhage and disruption increased. On the left the stomach is perforated more and more obliquely until a point is reached when the axis of flight of the bullet becomes parallel to the anterior wall or to the greater curvature. The result is either a long slit or a double hole through which the contents leak freely. The spleen, kidney, and splenic flexure will also at times be involved with the stomach, according to the direction and degree of the obliquity.

*Vertical epigastric or hypochondriac wounds.*—These are nearly always somewhat inclined downwards and inwards, but cases are met with of almost vertical wounds in which both exit and entrance wounds are on the anterior surface of the body and nearly vertically above one another; indeed, it is difficult to understand the position of the body which allowed the projectile to enter and leave the body on the anterior surface. When the projectile passes in these directions the injury of the liver or stomach is complicated by one of the colon or small intestine. In one case both the antrum of the stomach and the transverse colon were almost completely cut in two.

Vertical wounds on the lateral surface of the body appear at first as thoracic wounds, since there is usually no exit. On the right side they are not so dangerous, since they only traverse the liver; but on the left they may wound the stomach and spleen, or, worse still, the colon. It is unfortunate that symptoms of abdominal injury are at first absent or masked by the thoracic injury.

*Posterior and lateral wounds of hypochondriac regions.*—As usually met with, these are single entry wounds. When a bullet enters at one side and reaches the other it causes a "side-to-side" wound. These are serious, especially if towards the posterior surface of the body, and as a matter of fact are not commonly seen. The reason of their fatality lies in the fact that they may traverse liver, stomach, spleen, kidney, and pancreas, even if they miss the great vessels.

Wounds between the two axillary lines often exhibit the omentum protruded through the ribs. On the left the spleen and kidney and splenic flexure are in danger of being wounded, and for this reason are more serious than those occurring on the right. Such wounds are often caused by shrapnel and shell fragments. They are difficult to treat, as access to this region is not easy, and the infiltration of the retroperitoneal tissue renders detection of colon perforation difficult even if the spleen and kidney can be successfully dealt with. Posterior wounds, whether in the costo-vertebral angle or through the lower ribs, cause similar injuries to those on the lateral body surface.

*Wounds between Transpyloric and Intertubercular Planes.*

This region is a very fatal one. Above the umbilicus the injuries resemble to a large degree those met with above the transpyloric plane, but below the umbilicus we have to deal largely with small intestine injuries.

*Antero-posterior wounds.*—These are again seldom met with near the midline. On either side of the spine in the upper part of the region perforations of the transverse colon are met with and are usually easily dealt with. Lower down but still near the middle line the small intestine is wounded and the gravity of the cases at once rises. Towards the sides, that is, in the lumbar regions, wounds of the ascending or descending colon are encountered. If the peritoneal surface alone is involved the

danger is not so great provided no large destruction of the wall has taken place. Wounds of the left lumbar region are, however, very much more dangerous than those on the right for here the coils of jejunum overlie the great bowel. There is another point of interest about flank wounds and that is the possibility of the escape of the colon or peritoneum owing to the thickness of the muscles of the abdominal wall at this point. As a matter of fact the colon lies further from the lateral line of the body when seen from the front than might be supposed.

Wounds entering the back in this region are more fatal on the whole than those that enter on the other side of the body; not only do they wound the viscera, but they plough up the retroperitoneal tissue or cause it to be stripped up by blood infiltration. Single entry wounds in the loin often wound the retroperitoneal tissue as they pass into the colon. If the wound is caused by a shell fragment a large hole may be established through which fæces pass. Such a condition is grave, but the injury was a small perforation of the small intestine and in the other a small tear in the colon. Again, a study of Fig. 3 will show that no injury may result.

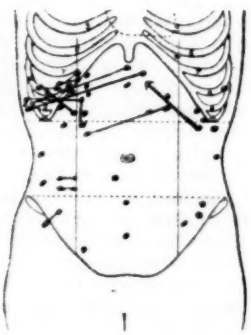
*Below Intertubercular Plane.*

This will also include wounds through the hips, buttocks, and thighs. All wounds here are very serious.

*Antero-posterior wounds.*—In the hypogastric region these are among the most fatal, in contradistinction to antero-posterior wounds in the epigastric region. The small intestine is nearly always perforated and torn in many places. Mid-line wounds are fairly frequent as there are no great vessels to cause death before hospital is reached. The bladder, if full, will be involved, but it is a somewhat remarkable fact that such injuries are not common. The pelvic colon and the rectum may be injured.

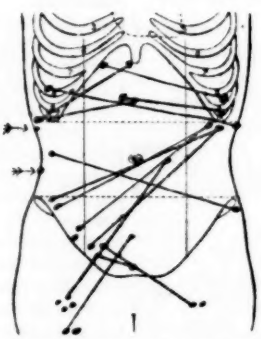
Towards the side of the body, in the iliac regions, wounds of the cæcum and iliac colon are

FIG. 1.



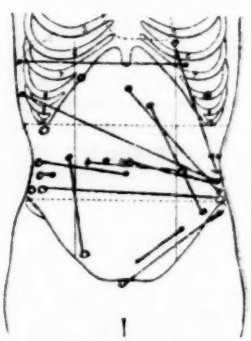
Shows entrance and exit wounds in a series of cases sent to the base without operation.

FIG. 2.



Shows the paths of the projectile in a series of cases which were fatal without operation. The posterior wounds are not differentiated from the anterior, but many tracks ran obliquely from back to front or vice versa. All the wounds below the groin lines were posterior.

FIG. 3.



A compound chart made by plotting the entrance wounds and joining them to the exit wounds when these are present. It shows the paths travelled by projectiles that traversed the abdomen (as shown by cœliotomy) without wounding a hollow viscus. The circles represent posterior wounds.

extent of the injury can be seen and free drainage provided, and this may limit the septic absorption. When a similar course is taken by a bullet or small shell fragment there is a hidden leak into the retrocolic tissue, which may cause death before sufficient relief can be given by a free incision or a colostomy.

*Side-to-side wounds.*—These are very fatal (see Fig. 2). They furnish wounds of the large as well as of the small intestine. It might be thought that both vertical colons as well as the small gut would be involved, but no such case has come under my notice. The descending colon lies far back, and for a projectile to catch both colons and the intervening small gut it would have to pass so near the posterior body line as to wound the great vessels or the spine.

The amount of damage done is very striking in some cases. Thus the small gut has been torn in several places and the transverse colon and the antral portion of the stomach all but completely divided by one bullet. At the same time the very opposite may happen. Two post-mortem examinations have been done on cases of peritonitis following a side-to-side bullet wound. In one the only encountered. There may be perforations or large tears.

*Side-to-side wounds.*—These may involve cæcum, small gut, and pelvic and iliac colons. Such injuries are very fatal, the small gut wounds being nearly always multiple. The bladder and rectum are wounded both intra- and extra-peritoneally. The pelvic vessels may also be injured and cause death from direct hæmorrhage or its after-effects.

*Vertical wounds.*—These are caused by missiles that enter the buttock, perineum, or thighs. The lesions are the same as those met with in wounds in other directions. They are important to remember, as a wound in the buttock or thigh is often unconnected in the surgeon's mind with the possibility of an intestinal lesion. One point of interest may be mentioned in this connexion—namely, that such wounds nearly always cause pain in the abdomen; indeed, in some cases the soldier thinks that he has been hit in this region. The fatality of such cases is partly due to the abdominal injury being overlooked and time being lost, as well as to the fact that a wound of the rectum is quickly fatal from peritonitis. Death may also occur from a wound of the iliac vessels.

*Possibility of Escape of Viscera in Penetrating Wounds.*

It has always been a much-debated point as to whether a projectile could traverse the peritoneal cavity without wounding the hollow viscera. There has never been any doubt that the liver and kidneys could be damaged without the involvement of other organs. The point that required settling was the escape of the stomach in the upper and the small intestine and colon in the lower part. Those who believed in treating abdominal wounds by rest and starvation pointed to cures by this means of patients in whose cases, from a study of the track of the bullet, it appeared that some hollow viscus must have been perforated.

Until quite recently, when cœliotomy became the routine treatment of abdominal wounds, a proof that such escape was possible was wanting. Fig. 3 shows a chart made of cases in which the abdomen was opened and explored and no hollow viscus found injured. One case, in which the liver had been perforated but the stomach had escaped, has been included because it appeared certain that the stomach must have been perforated. The abdominal cavity in these cases was usually full of blood which came from wounded mesentery, omentum, or abdominal wall.

In the course of many abdominal operations bruising and tears of the peritoneal coats of the hollow viscera, stomach or intestine, are not infrequently seen, showing that even a modern bullet can push aside the visceral wall with actually perforating it. These tears and bruises may also explain some of the cases in which a fæcal fistula or an intraperitoneal abscess appears some time after the receipt of the wound.

We have therefore a series of cases of penetrating wounds in which the injury to the bowel increases in severity:—

1. Peritoneal penetration without visceral injury.
2. ,, ,, ,, ,, ,, but with blood effusion.
3. Peritoneal penetration with abrasion of visceral wall.
4. ,, ,, ,, a single perforation or tear.
5. ,, ,, ,, multiple perforation and tears.
6. ,, ,, ,, complete division of the gut.

Actual operative proof that a bullet can perforate the left epigastric region without injuring the stomach is at present wanting, but cases have been seen in which the bullet has just nicked the lesser curvature and in which a very slight alteration in direction would have caused it to miss the organ altogether.

*Determination of Peritoneal Involvement.*

With all possible care, with an extensive experience and a full appreciation of the numerous fallacies, it is frequently difficult to make sure that the wound is penetrating. If it is difficult when there is an entrance and exit wound, it is still more so when there is only one wound. It may be that symptoms such as shock, hæmorrhage, rigidity, signs of peritonitis, or rapid pulse will be present, but in some cases that are received early there will be no such guides. As there is a distinct relation between the length of the interval since the receipt of the wound and the mortality it is important to be able to determine the probability of penetration. Antero-posterior wounds are the easiest to judge; the only point to remember is the thickness of the flank muscles. Transverse or tangential wounds are more difficult.

Below the transpyloric plane a wound with the entrance on the right of the midline and an exit anterior to the right lateral line of the body is very likely non-penetrating or one that only just opens the peritoneum. Above the transpyloric line such a wound is almost certainly perforating. A bullet which passes in and out between the semilunar lines probably does not open the belly, while one that passes in and out outside these lines probably does. In the longitudinal direction a bullet which enters near the costal margin and emerges above the groin has most likely traversed the abdomen.

Where it is a question of single entry wounds there is really nothing except the symptoms to guide one, as it usually is impossible to tell the direction of the projectile. One case may be quoted. A man was shot just beside the umbilicus. The shape of the wound suggested a bullet. It was determined to explore the abdomen. As the wound was in a convenient situation the exploratory incision was made through it. It was then found that the rectus muscle was torn the length of the incision. This was enlarged downwards to the pubes, the muscle being much torn but the sheath and peritoneum being intact. The bullet appeared to have gone behind the pubes, but as there were no bladder symptoms nothing further was done, and the case was sent to the base.

In the above-quoted case the wound was situated so that exploration was easy, and the incision could be used for the abdominal exploration. In other cases the exploration of the wound will not give good access to the abdomen. Here it is most probably best to explore the peritoneal cavity by a well-placed incision and to use the original wound for drainage or an artificial anus. This applies especially to wounds in the loin where there is doubt as to the wounding of the colon or peritoneum.

Again, there are the vertical wounds entering from the thorax and those from the buttock. The former may give no sign for some time, but the latter often declare their involvement of the peritoneum by the sensation of abdominal pain at the time of the injury.

As a criterion of visceral penetration no reliance is to be placed on the non-obliteration of the liver dullness.

Bomb wounds require some notice. The fragments into which a bomb is broken on explosion are often very small, but so high is their velocity that they have great power of penetration. The abdomen of a man injured in a bomb explosion is often a mass of small, irregular, and insignificant-looking wounds. It is often hard to persuade oneself that any of them are penetrating. It may be possible to explore one or two, but if they are multiple and there is the slightest likelihood of bowel injury it is best to make an abdominal incision in a convenient place and examine the peritoneal surface and deal with the injury found. I have known small bomb fragments to enter the back of the abdomen and cause as many as 14 perforations of the small gut.

The symptoms pointing to peritoneal involvement which are usually looked for are: (1) rigidity of the belly wall; (2) a rise in the pulse-rate; (3) the signs of hæmorrhage; and (4) absence of liver dullness.

Rigidity of the abdominal muscles due to peritoneal infection is seldom absent after 4–5 hours, and a rise in the pulse comes on about the same time. In the case of the muscular rigidity care

must be taken to distinguish that due to local trauma, which can usually be done by noting that the pulse has not risen too. In the case of wounds in the lower thorax the well-known reflex stiffening of the abdomen must be borne in mind.

The signs of hæmorrhage are difficult to distinguish from those of shock, as blanching and a rapid pulse occur in both. There is very seldom any restlessness connected with the hæmorrhage or failure of sight or air-hunger. It is well known that the amount of blood has to be very great before it can be relied on to give notice of its presence by the appearance of dullness.

Hæmorrhage into the retroperitoneal tissue will give rise to very decided abdominal rigidity. With this type of hæmorrhage there is often well-marked shock, which is considerably increased in cases of gas infection. Such cases present all the signs of an acute peritoneal infection.

*Causes of Death.*

These are shock, hæmorrhage, peritonitis, and septic infection of the retroperitoneal tissue.

*Shock.*

The amount of shock present within a short time of the injury varies within wide limits, but on the whole it is usually fairly severe. On the other hand, men have undoubtedly walked considerable distances who have afterwards died from a wounded intestine. Sometimes the wound knocks a man out at once; at other times the onset of shock is more gradual. One man five hours after being wounded smoked a cigarette and expressed himself as feeling well; he died from peritonitis within 36 hours.

What actually causes the shock is undecided. It has some relation to the amount of injury. On the other hand, there may be a considerable exposure of the viscera, especially in the upper part of the abdomen, without profound shock, and three small perforations of the ileum have produced grave shock, while in a double perforation of the stomach the shock was hardly noticeable.

Stripping up of the retroperitoneal tissue is accompanied by shock, but this is probably connected with the loss of blood, though it may well be caused by disturbance of the sympathetic. In disruption of the liver shock is great, but here again the loss of blood is a factor.

*Hæmorrhage.*

Hæmorrhage plays a very important part in wounds of the abdomen, and is perhaps the most frequent cause of death, not only within a few hours of the receipt of the wound but also at a distant period. Hæmorrhage may occur from the following places: (1) Great vessels; (2) mesentery; (3) omentum; (4) abdominal wall and retroperitoneal tissue; and (5) solid viscera.

*Great vessels.*—A chart has been made of 62 cases of penetrating abdominal wounds, nearly every one of which has been submitted to operation. Among those 62 cases only 2 entered in the midline above the umbilicus. A possible explanation of this is that most of those shot in the midline above the umbilicus died from hæmorrhage from the great vessels. The only large vessels that have been found bleeding at operation are those of the kidney and spleen and the external and internal iliacs. These latter were wounded by missiles entering from the buttocks.

*Mesenteric vessels.*—These are perhaps the vessels that are most frequently found bleeding when the abdomen is opened. The hæmorrhage is not violent but it is steady and often has filled the abdomen. It is often the cause of death in otherwise successful enterorrhaphies. The patients leave the table in a fairly satisfactory condition, but slowly die in spite of saline administered under the skin or into a vein.

When the hæmorrhage is due to a wide tear in the mesentery the bleeding point is easily found and tied. On the other hand, when the mesentery is only perforated the bleeding takes place into its substance and the vessel may be hard to find. When the meso-sigmoid is wounded the difficulty may be very great, as the infiltration extends into the iliac fossa and over the bladder; in fact, it resembles the retroperitoneal hæmorrhage to be mentioned later.

*Omentum.*—This, too, gives rise to bleeding, but to nothing like the same extent as does the mesentery. The vessels are smaller and seem to close more easily.

*Abdominal wall and retroperitoneal tissue.*—As a rule, the hæmorrhage is not severe from the anterior parietes unless a vessel such as the deep epigastric has been divided, as occurred in one case. With the posterior wall it is different. The bleeding here seems to come from the vessels supplying the colon or the pancreas, and possibly from the vessels in the root of the mesentery. It is mostly met with in cases where the projectile has pierced the posterior abdominal wall, or passed transversely across the front of the spine with or without penetration of the peritoneal cavity.

It is met with as a diffuse hæmorrhagic infiltration of the retroperitoneal tissue, which may be limited to a small area, or extend over a very large portion of the posterior wall of the abdomen. It may be so great as to displace the small intestines, raise the colon, and bring the lateral part of the posterior wall into contact with the anterior. Such a hæmorrhage appears as a large purplish tumour when the peritoneum is opened. The peritoneum may be intact over it, or there may be rents in it through which blood slowly oozes.

It is useless to attempt to find the bleeding point, and the most that can be done is to pack the part from which the bleeding appears to come. Sometimes it may be possible to raise the posterior peritoneum and suture it to the edge of the exploratory abdominal wound, thereby shutting off the peritoneal cavity and admitting of an extra-peritoneal packing.

Such cases are often fatal; it may be from direct hæmorrhage or from injury to the pancreas. There is often very considerable shock, which possibly is due, apart from grave injury, to interference with the sympathetic. Another danger is that of gas infection, which runs riot in the infiltrated retroperitoneal tissue, and is almost always fatal. Gas infection of the retroperitoneal tissue, quite apart from colon wounds, has caused death in some cases of intestinal suture.

*Spleen, liver, and kidney.*—Hæmorrhage from these organs presents no distinguishing features from those met with in civil practice.

*Treatment.*—It is impossible within the period when operation will be most useful to distinguish between intra-abdominal hæmorrhage and an intestinal lesion complicated by hæmorrhage; nor is there any real need, as a man with a perforating wound of the abdomen should be operated upon on principle. The intestinal lesion must be mended and the hæmorrhage will be incidentally arrested whether it has produced constitutional symptoms or not.

When cases are seen for the first time after the lapse of 24–36 hours there is more need for an accurate diagnosis. Hæmorrhage which has lasted this length of time will either have brought the patient to a state of collapse when operation will only hasten the end or it will have ceased. An intestinal lesion may be still capable of successful treatment.

The difficulty arises from the fact that blood in the abdominal cavity will produce both rigidity and distension of the abdomen, thus giving rise to a suspicion of peritonitis, but it can be distinguished from an infective peritonitis by the slow rate of the pulse. Thus a patient hit through the abdomen 36 hours previously and having a rigid and distended abdomen is best left alone if he is in good condition and the pulse about 80.

*Peritonitis.*

This is the usual cause of death when this occurs some time after the receipt of the injury, but it may be fatal within 24 hours, especially if the rectum is the source of infection. After fighting there are always men arriving at the field ambulances and casualty clearing stations with well-marked peritonitis. These are the soldiers that the bearers have been unable to collect in the confused fighting which so often takes place. There is nothing remarkable about these cases from a surgical point of view except that their facial aspect leads one to think that they are in better condition than an examination of their radial pulse—which is often non-existent—shows to be the case.

There is another type of peritonitis which is worth notice, and that is the slow dormant form. It is seen in cases which have been shot in the abdomen, and for one reason or another have not been treated by operation. Such cases may or may not show signs of peritoneal involvement, but improve for a day or two and give the impression that recovery may take place. There may have been some vomiting, but this has subsided and the tongue keeps clean. Then the abdomen becomes somewhat tumid, but still the general condition remains fair, and the pulse, though somewhat rapid, is of fair quality. Then the vomiting returns and the patient sinks. Some patients with this type of peritonitis have been sent to the base with the belief that they are doing well. A necropsy there has shown peritonitis, a fæcal abscess, and an unclosed perforation of the intestine.

Of the later complications of peritonitis little is seen at the front, but occasionally cases of subphrenic abscess due to stomach lesions are met with and a certain number of fæcal abscesses are opened in men who arrive late at the casualty stations. Such cases have nearly always been fatal.

*Infection of Retroperitoneal Tissue.*

There are two sources of infection: (1) from the bowel; and (2) from infection with the bacillus aerogenes capsulatus.

1. This is usually met with in retroperitoneal wounds of the colon. There may or may not be a fæcal fistula, and the external wound may be large, small, or practically healed when the symptoms begin. In the case of shell wounds in the loin the infection may spread with alarming rapidity and the patient die in a short time, although free exit has been given either by the wound itself or by a surgical incision. The retroperitoneal tissue is œdematous and blood-stained, or there may be an actual collection of foul-smelling fluid. In the case of bullet wounds or small shell fragments the external wound heals and the case progresses well. Then the pulse begins to accelerate and an examination of the flank or iliac region shows a dull area. An incision into the loin reveals the condition above noted.

2. In these cases the wound is usually in the back or the missile has passed in transversely from the loin or hip. The patient is evidently ill and there are rigidity and dullness in the lower or lateral portion of the abdomen. If the abdomen is opened the peritoneum is found raised from the posterior abdominal wall displacing the colon and crowding the intestines to the opposite side. The mass is tympanitic. Such cases are usually rapidly fatal, and the vena cava has been found after death to be blown up by gas formation.

*Nature of Visceral Lesions.*

*Stomach.*

These wounds depend upon the projectile and the direction it takes. Bullets passing in an antero-posterior direction cause small perforations through which the mucous membrane does not herniate as it does in the small intestine; this is what would be expected from the nature of the mucous lining. Shrapnel bullets cause larger perforations, the edges of which are more excoriated than is the case with bullet wounds. The larger size and rounder form of the bullet cause a bruising of the wall before it bursts its way through. Near the lesser curvature bullets cause rather larger wounds than would be expected, the wound being often V-shaped, due to a gaping of the lesser curvature.

When the axis of flight of the projectile becomes more or less parallel to the wall of the stomach the wounds become larger. Sometimes they are linear slits, sometimes a linear slit followed by a perforation. When the projectile passes in through the epigastrium and out by the axilla the slits are more or less parallel to the greater curvature. When the missile passes in about the nipple line and takes a downward and oblique direction towards the right, the wounds are more or less at right angles to the greater curvature, and two cases have been seen in which the antral portion of the stomach was almost completely divided.

In the case of shell fragments the wounds are more irregular. When the fragments are large and enter between the axillary lines large holes are produced in the cardiac end often complicated by spleen or colon lesions. When shell fragments carry away portions of the abdominal wall over the stomach area this organ—sometimes wounded—is prolapsed together with the colon or even the small gut.

The escape of gastric contents depends upon the position of the wound, its size, and on the presence or absence of food within the viscus. It is most likely to occur when the wound is large and near the middle of the greater curvature. The contents certainly do escape in a fair number of cases. Secondary complications are not usually seen at the front, but one case has been met with in which a left subphrenic abscess followed by a right empyema was the result of an unoperated bullet wound of the anterior stomach wall.

*Treatment.*—It may be granted that a certain proportion of stomach wounds heal without operation, but those simple perforating antero-posterior wounds are very easily closed by operation, whether they are on the anterior or on both surfaces. When the missile passes obliquely through the body it may produce a wound as long

as 4 inches, and, as stated above, it has been known to all but completely divide the antral portion of the organ. Such wounds cannot be expected to heal unaided. It seems therefore wiser to make no exception in the case of the stomach but to operate on principle.

Missiles entering in the axilla, especially shell fragments, produce ragged holes and, in addition, may wound spleen and colon. Such cases are usually fatal, but operation gives the best chance. In such cases it is necessary to divide the rectus or to use a subcostal incision. The splenic flexure wound is likely to give more trouble than the stomach injury. A posterior wound is best found and sutured through an opening in the gastro-colic omentum, such as is used in a posterior gastro-jejunostomy.

*Small Intestine.*

The character of the small gut wounds varies in some degree with the projectile that caused them, but not to the extent that one might expect. A bullet will inflict as severe an injury as a piece of high explosive shell. To think that a patient shot through the abdomen with a bullet has a better chance than one injured by a bomb or shell fragment is to commit a grave mistake. On the whole, the wounds caused by bomb fragments are the least severe.

*Bullet injuries.*—The most simple injuries are the perforations made by the bullet striking the intestine at right angles to its long axis. Here there are two perforations through which the mucous membrane pouts to form a small round rosette. Apparently, as the flight of the bullet becomes more tangential to the circumference of the gut the perforations become slits, but these are still two separate wounds. These wounds gape somewhat, and the mucous membrane overlaps the cut muscular coat so that a considerable mucous surface meets the eye. The general appearance still suggests a rosette. The two slits may enlarge until the continuity of the intestine is only maintained by two narrow strands of intestinal wall.

In other cases there is only one wound involving different portions of the circumference of the intestine; it may reach from near the mesenteric border to near the free margin, or involve the free margin only. In other cases the free margin is slit right back to the mesenteric border so that only a narrow strip of bowel wall remains. It is remarkable that the last piece to be divided is usually the attached portion. Here there is a wide gaping wound with an extensive exposed mucous surface.

In extreme cases the gut is completely divided. In another extreme form of injury a portion of the intestine is only represented by a long, narrow, ragged strip of bowel wall as if some animal had gnawed or worried it.

The surgeon must be prepared to meet with all the above-named injuries distributed over several feet of small intestine.

*Escape of intestinal contents.*—The escape of the intestinal contents takes place very much less often and to a less extent than would be believed. This does not depend entirely on the extent or nature of the wound. The intestine may be widely laid open and in more places than one, and yet very little contents escape. The small wound is plugged to a certain extent by the protrusion of the mucous membrane, but the amount of peritoneal soiling seems to depend on the length of time elapsed since the wound and the state of the man's bowels. It does not seem that transport in ambulances has much to do with it.

*Movements of injured portion.*—After injury the gut is paralysed for a certain period. What the actual duration of this period is it is not possible to say. At first the injury will be found to lie underneath the wound in the abdominal wall. When some time has elapsed the injured gut may be found at some distance from the external wound. This shows the importance of a complete examination of the intestines. The initial traumatic paralysis is probably a large factor in preventing the extrusion of the intestinal contents, since the non-extrusion is to a great extent independent of the size of the intestinal wound; a coil of small gut may be completely cut across without fæcal escape.

*Treatment.*—It is very important to limit the duration of any operation. Simple suture should always be employed where possible, even if it involve some narrowing of the gut; fortunately the transverse direction of the greater number of the tears lends itself to this method of repair. On the other hand, the nature of the injury entails a resection in the majority of cases.

In most cases the injuries occur close together, but in a small proportion multiple resections have to be faced. Sometimes time has to be gained by leaving the injured portion outside the abdomen, but on the whole these cases do not do well because of the shock produced by the injury and loss of blood. When the injury is high up resection must be faced as the only chance.

When a knuckle of small gut is prolapsed, or prolapsed and perforated, it is a nice point as to the best course to be pursued. If the patient is in anything like good condition the abdomen should be explored, as a single injury is unusual. If, on the other hand, the patient is bad, or the injury of long duration, the injured coil is best secured *in situ*, care being taken that it is not strangulated by the abdominal wall.

Circular end-to-end suture has proved satisfactory, and appears as safe as the longer and more tedious lateral union. It has been very seldom that failure of the suture line has had any bearing on the death of the patient.

*Causes of death.*—Death usually results from shock due to the injury or to loss of blood. Probably loss of blood is accountable for most of the deaths which occur after operations performed within a favourable interval since the receipt of the wound. The patient may leave the table in very fair condition and slowly and gradually sink. The importance of early operation is more to be insisted upon on account of hæmorrhage than on account of fæcal contamination. The increased loss of blood due to transit is less than the increased loss due to detention between the firing line and the operating centre.

A certain number of cases die from septic peritonitis. This may be acute or of a slowly progressive nature, the patient gradually going down hill and emaciating. It is possible that failure to remove the blood in the abdominal cavity is a factor in the occurrence of this septic peritonitis. Again, death occurs from what is called obstruction. In the greater number of cases this obstruction is that due to peritonitic inflammation, such as is seen in acute appendicitis. The infection is due to the wounds, hardly ever to failure of the suture line.

In a few cases obstruction occurs without infection. Three such cases can be mentioned. In all three the abdomen was again opened and the block

short circuited. One case recovered. In all these cases the suture was perfect. The upper segment of the bowel was distended, the lower segment collapsed. It has been suggested that the upper segment suffered from a persistent traumatic paralysis. It is possible, however, that the lower segment was at fault and did not take up the peristaltic wave, which originated in the proximal portion of the bowel, but lay inert and caused a physiological block. The solution of continuity of the bowel had interrupted the mechanism which transmits the peristaltic wave.

*Protrusion of Omentum and Viscera.*

By this is meant not the exposure of the abdominal contents through a large gap in the abdominal wall, but their prolapse through comparatively small wounds.

The omentum, as would be expected, is most frequently seen in this connexion. It appears in larger or smaller amounts in wounds situated all over the abdomen, and also in those situated in both hypochondriac regions, where it reaches the outside of the body through the interspaces or through broken ribs, where one would hardly expect to see it prolapsed. The method of extrusion is two-fold. It is either (1) carried out by the projectile, or (2) is driven out by the intra-abdominal pressure through either the entrance or exit wounds.

In one case where a shell fragment had entered above the umbilicus in the mid-line and had come out in the right loin just behind the lateral line of the body, the omentum was so firmly carried into the long oblique exit wound that it required considerable manipulation to release it; it was, in fact, strangulated within the abdominal wall, although none showed externally.

Before operation became the rule it was usual to leave these tags to slough off, and probably this is still the best course if the case is seen late and there are no abdominal symptoms. If seen early it is best to treat such cases as other abdominal wounds and explore. In several cases in which this has been done the intestine has been found wounded.

Next to the omentum the small gut is most frequently herniated, and here again, as in the case of the omentum, it may be carried or drawn out. Sometimes a knuckle that has actually been wounded is lying outside. The treatment is influenced by the time that has passed since receipt of the wound. If the injury is of some standing it has been successfully left alone, but a small gut fistula, especially if high up in the bowel, is very objectionable, so perhaps the better course would be to suture it and replace it within the abdomen, ample drainage being provided locally; this has been done with success. If the injury is of recent date the best course is a cœliotomy.

The transverse colon has also been seen herniated. Here, again, the same rules apply as in the case of the small intestine. One case of herniated transverse colon may be mentioned. The gut was tightly strangulated in the wound. As the injury was nearly two days old the constriction was relieved and an artificial anus established.

*Injuries of Great Gut.*

These injuries do not materially differ in their nature from those seen in the small gut except in the fact that the great gut is in places uncovered with peritoneum. The tube may be perforated, torn, or completely divided. The size of this intestine, however, causes complete division to be comparatively rare and the absence of multiple coils renders multiple injuries less frequent.

*Transverse colon.*—Perforations are most common in the transverse colon and these are usually caused by antero-posterior wounds. Oblique vertical wounds also cause a similar injury, but in addition may completely or nearly completely divide the intestine. Transverse colon wounds are the most favourable of all great gut wounds provided they are submitted to early operation.

*Vertical colon.*—The two vertical portions of the colon may be perforated, but usually we have here to deal with slits or tears of varying extent. Such wounds are caused by missiles which pass obliquely across the body and which may or may not also wound the small gut. The involvement of the small intestine is more commonly met with in the case of the descending colon as here the small gut overlies the great gut.

Sometimes the vertical colon may be completely cut in two. Such a case was seen lately in which the bullet entered behind and caused a fairly large wound in the front of the left lumbar region. Through this wound were prolapsed several coils of small intestine. The patient who was only wounded a few hours before was grossly shocked and never rallied. At the necropsy it was found that the colon was completely severed and retracted so as to lie 2–3 inches apart. The contents had leaked into the peritoneal cavity. There was no perforation of the small gut nor was there any other injury.

When trying to form an opinion as to the involvement of the large intestine in more or less antero-posterior wounds it is well to bear in mind the fact that the colon lies rather further from the lateral line of the body than might be supposed. The intraperitoneal wounds of the vertical colons are unfortunately often continued into the extra-peritoneal portion of the gut which renders their treatment much more difficult. Small wounds in the angle where the peritoneum is reflected off the colon on to the lateral abdominal wall are hard to find, and such wounds have escaped detection with fatal results.

Single entry wounds in the loin present great difficulties. In some cases only the retroperitoneal portion of the gut is damaged, but in others both retro- and intra-peritoneal aspects are opened. Unless there is an escape of fæces it is often impossible to say whether the bowel is wounded or not. These intraperitoneal wounds are of all sizes from a tiny tear by a fragment of high explosive to a big rent by a more massive portion. The same difficulties arise with bullet wounds. In some cases the first sign of damage to the intestine is given by a rise in the pulse-rate and the appearance of a dull area in the flank.

Again, a patient with a large flank wound with a free exit for the discharges will die rapidly from septic infection, even when a necropsy shows there has been no other lesion. The stripping up of the retroperitoneal tissue by a missile that passes in from the side and wounds the colon on its way is a grave complication, as rapid infection is apt to follow in the blood-infiltrated tissue.

*Colon flexures.*—Wounds of the hepatic flexure are very similar to those of the vertical colons, but those of the splenic flexure are more dangerous because of its high and deep position which renders exploration difficult. This flexure is very likely to be wounded by a projectile—usually a shell fragment, that enters the lower lateral part of the left hypochondrium—and to be involved along with the

stomach, spleen, and kidney. Such wounds seem to form a class by themselves and are very fatal.

*Cæcum.*—There have been a fair number of cæcal wounds. Most of them have been small in extent, and have lent themselves to primary suture. In one case, at least, the loss of tissue has been so great that an artificial anus was necessary.

*Pelvic colon.*—These wounds may be perforations or tears. The number met with has not been great, but on the whole they are favourable owing to the gut being completely surrounded by peritoneum. At the same time, the infection derived from the lower part of the great gut is very virulent if much time has elapsed during which infection may spread.

*Rectum.*—These wounds are caused for the most part by projectiles that pass across the body at the hip levels and those that pass into the pelvis by way of the buttocks and thighs. They are often, indeed usually, complicated by small intestine lesions and sometimes by those of the bladder. Rectal wounds, in my experience, seem to be very fatal. They may be extra- or intra-peritoneal, or both. Their danger is, no doubt, partly due to frequent involvement of the small gut, but apart from this they seem to be intrinsically serious from the infectivity of the rectal contents.

The above paragraph has reference to what may be called pelvic involvement of the rectum. There are other wounds which complicate buttock or perineal injuries. Here the rectum is either exposed intact at the bottom of a great foul chasm or may be laid open or completely divided. Such wounds are decidedly dangerous in spite of the free exit that is present or can be given.

### *Treatment of Great Gut Injuries.*

Many such injuries are found in the course of an exploratory cœliotomy and may complicate stomach and small gut lesions.

*Transverse colon.*—Simple perforations or tears in the transverse colon are readily closed by suture and usually do well. With larger lesions it is wiser perhaps to be content with an artificial anus. This is especially the case where the stomach and small intestines have been wounded. It is obvious that such lesions must have the first attention, and it may so happen that no time remains to be expended on accurate suture of the colon. One is more ready to be content with this procedure as the re-establishment of the lumen of this portion of the colon is comparatively easy.

*Vertical colons.*—Here again the operator may be faced with complications in other parts of the intestinal tract; but apart from these the opportunities for suture will be less. The truly intraperitoneal lesions may be closed if not extensive, but many cases will be encountered where, from the loss of substance, an artificial anus will recommend itself as the best course. This is all the more the case when the tears run into the extraperitoneal portion of the gut. To bring the gut up it must be mobilised by division of the peritoneum on its outer or lateral aspect. The position of the anus on the abdominal wall will be indicated by the position of the lesion.

When the surgeon has to do with wounds in the posterior aspect of the flanks he is in a difficult position. If the wound is a single one, as it often is, he is uncertain whether the peritoneum has been opened or if another viscus has been wounded.

If he could make sure that only the extraperitoneal aspect of the gut had suffered, the best course most probably would be to use a loin incision. If he opens the peritoneum either in the midline or semilunar line he may find that there is no small gut injury, and his manipulations to find the wound may allow the highly infective fluid from the retroperitoneal tissue to infect the abdomen by disturbing the apposition of the colon to the lateral abdominal wall, which has so far limited its spread.

There is no definite line of procedure that can be laid down, but should the surgeon have had to open the abdomen to assure himself of the absence of intraperitoneal lesion and found nothing, there is a great deal to be said for closing the wound and exploring the colon and giving free exit to the infective fluids through a loin incision. In some cases when the patient is gravely ill—too ill for an exploratory operation—a free loin incision may turn the balance in his favour.

*Flexures of colon.*—In some cases of wound of the hepatic flexure a cæcostomy has improved matters, but as a cæcostomy does not completely cut across the lumen of the bowel it cannot be relied upon to cause a cessation of the fæcal contamination.

The splenic flexure presents all the above-mentioned difficulties in an acute form. It is best to mobilise it freely and form an artificial anus if there is the least doubt as to what procedure should be followed. A transverse colostomy is useful here and in lesions of the descending colon.

*Pelvic colon.*—This can be fairly easily dealt with by suture or by making an artificial anus, the choice depending on the extent of loss of tissue.

*Rectum.*—Where possible it may be sutured; such a procedure is difficult, but is much facilitated by a table which gives an inverted posture of the body. Failing satisfactory suture a transverse colostomy is better than an iliac one, as the lumen of the bowel is easier to re-establish. A colostomy is often indicated in buttock wounds involving the bowel.

### *The Question of Operation.*

It is only recently that abdominal wounds have been treated systematically by operation, and that the rapid collection of the patients for this end has been arranged. The reason for this has been twofold. In the first place, there was the belief held by many that abdominal penetrating wounds were best treated by immediate rest, morphia, and the withholding of fluids and food by the mouth. This was a legacy left us by the South African War. In the second place, the results obtained in the early part of the war were disappointing to the operators. They did not appreciate that the mortality must be high from the very nature of the injury.

The "rest" treatment was based on the belief that penetrating wounds of the intestine would heal by themselves. It was pointed out that many cases who were undoubtedly shot through the abdomen did recover, and it was assumed from the direction of the missile that a hollow viscus must have been injured. Recent operations (see Fig. 3) have proved that the abdomen can be traversed in many directions and yet the intestine escape injury. It has also been proved that many wounds that apparently involve the peritoneum only traverse the abdominal wall.

The presence of the signs of peritonitis in patients who eventually recover has been advanced as a proof that wounded viscera heal without

surgical aid. In answer to this it can be said that blood and bile will both produce these symptoms. In addition, patients passed to the base as cured have died there from fæcal abscesses with open wounds in the intestine.

Again, a fairly large series of operations prove that the injuries of hollow viscera are rarely single or simple, and that frequently there are multiple perforations and multiple divisions of the gut, and that a bullet produces as severe injuries as a shell fragment. No one who has seen these injuries believes that spontaneous cure would be anything but very rare.

It can be definitely stated that the old belief in the spontaneous cure of a gut wound is fallacious and dangerous. It was based on insufficient data and has been responsible for loss of life.

The stomach is the only hollow viscus in which spontaneous cure can be looked for, and that only when the missile takes an antero-posterior direction. It may be that the non-protrusion of the mucous membrane in stomach wounds is a factor in their spontaneous cure. In the intestine the pouting of the mucous membrane prevents the peritoneal surface of a contiguous coil from settling down and becoming adherent, while in the stomach the wall of this organ can be applied directly to another peritoneal surface and thus become quickly shut off by adhesions.

If cases are to be operated on early a certain number will present no intestinal lesion, but there will be a peritoneal cavity full of blood. If the bleeding is going on it will be arrested and good will be the result. In other cases the bleeding point will be impossible to find or the hæmorrhage may have ceased. It remains to determine whether more lives will be lost in such cases by operation than will be saved in the case of intestinal lesion or continuing hæmorrhage. Operations that have been performed show that many more lives are saved than are lost by early operation.

It may be objected that moving a patient may increase the hæmorrhage. That may be the case, but less blood will be lost by the jolting in an ambulance than will be lost by leaving a patient to bleed slowly for hours. It may be said with confidence that every patient with an abdominal wound should be moved with all possible speed to a hospital where an operation can be performed. Symptoms of peritoneal involvement—rapid pulse and rigid abdomen—will be present in nearly every case by the time he comes to the hospital, but these should not be waited for if the wound has, in the opinion of the surgeon, penetrated a dangerous area.

### *Care of Patient before Operation.*

*Administration of morphia.*—It is usually considered bad practice to give morphia to abdominal cases while the question of operation is in the balance. Under war conditions this opinion must be modified. The patient has to be moved under very disadvantageous conditions. It may be down a communication trench the passage of which may last an hour and a half. He then has to be carried to the ambulance car and moved in this to the casualty clearing station or special hospital. There can be no doubt that under these conditions the relief of pain and anxiety afforded by morphia counterbalances the possible masking of symptoms. As has been said above, symptoms should not be waited for but operation performed on principle, so that the objection to morphia fails in great degree.

*Withholding of water.*—There is no objection to giving fluids in moderate quantities as there is usually little or no escape of intestinal contents, and the distress caused by withholding fluids is painful to watch and harmful to the patient, who most probably is already suffering from a lack of water in the body.

*Treatment of shock.*—When a patient arrives at an operating hospital the question of immediate operation has to be considered. On the whole, it is better to put the man to bed for an hour or so. Subcutaneous saline is of great value; it can be left running in while other cases are attended to. Most cases improve by this treatment in a very decided manner. If no improvement takes place it usually means that hæmorrhage is going on or that the patient is past help. In such a case operation is the best course if the condition of the patient offers any hope, as thereby hæmorrhage will be arrested and the patient possibly saved. It is a difficult point to decide and will tax anyone's power of judgment. Sometimes six or eight hours' rest will produce such improvement that an operation may be possible where at first the case seemed absolutely hopeless.

### *Operative Procedure.*

A paramedian incision is the standard method of opening the abdomen, and it should be used in the first instance in all cases unless there is some distinct indication to the contrary. It is better to prolong it than to make lateral right-angle extensions.

In some antero-posterior wounds near the body line an incision near the semilunar line is perhaps best as the colon is more accessible here, and it is very desirable to limit the operation field on account of the infectivity of the colon contents. It must not be forgotten, however, that on the left side the small gut overlies the colon and is likely to be also wounded. An artificial anus can also be made more readily here if it is found that loss of substance or extraperitoneal wound has rendered this necessary.

The hepatic flexure, too, can be dealt with by a like incision. In the case of the splenic flexure it is possible that a rectangular extension may be required. With splenic injuries and also those of the cardiac end of the stomach a subcostal or a rectus sheath incision with a lateral extension is possibly best where the wound is one involving the left hypochondrium in its lower part. On the other hand, in oblique epigastric wounds the median incision is probably best; it can be prolonged laterally if required.

In some cases of wounds in the back of the loin or in the lateral line of the body there will be doubt as to whether the peritoneum is involved or the colon wounded extraperitoneally. In such cases it is best to open the abdomen first, and if the peritoneum is intact to explore the wound from the loin, and make an artificial anus and provide free drainage of the retroperitoneal tissue. If there is much bruising of the colon, or much loss of substance, so that doubt exists as to the possibility of preventing further infection, it is well, provided the descending colon is divided, to perform a complete transverse colostomy. In the case of rectum wounds a transverse colostomy is best, as the lumen of the bowel can be more easily restored here than in any other place.

In general, it may be said that a long incision in the abdominal wall saves time and therefore saves shock. When once the abdomen is opened the first

care must be the arrest of hæmorrhage; then a systematic examination of the hollow viscera. The small intestine should be taken first, the cæcum picked up, and the intestine followed to the duodenum. Then the large gut is examined, special attention being required at the flexures and the outer edge of the vertical colons.

Circular enterorrhaphy is the best in resection, as it is quicker than lateral anastomosis, and failure of the suture line need not be reckoned among the causes of failure. Resection, of course, is to be avoided if possible, even at the risk of some contraction of the bowel by suture of the rents or perforations. It is hardly necessary to say that the lesions of the small bowel must be dealt with first and the colon treated as the injury and especially as time and the condition of the patient dictate. In multiple injuries of stomach, colon, and small gut the ingenuity of the operator may be considerably taxed.

*Results of Early Operation.*

It is intended to publish the results of the cases when a good series have been collected and the numbers are large enough to form some estimate of the comparative fatality of the different injuries. The numbers will probably be sufficient when the operative treatment has been in progress six months.

At present it is enough to say that many lives have been saved, that all sorts of injuries have been successfully dealt with, and that no one who has practised operative treatment is in doubt as to the wisdom of the procedure. The mortality at the casualty clearing stations has been reduced, and that in spite of cases, which formerly died at field ambulances, reaching the casualty stations, and in spite of a more accurate discrimination between penetrating and non-penetrating wounds which naturally would tend to increase the percentage mortality. Cases arrive at the casualty clearing stations in a comparatively small number of hours after being hit, the shortest period to date being 2½ hours.

I have myself operated on a number of cases, but the greater part of the operations have been done by the surgical specialists, and it is to their skill and enthusiasm that the improvement is due. The arrival of cases at all hours of the day and night has entailed a good deal of hard work on the part of the medical officers, but it has been well repaid. They will in due course publish the details of their own cases, but I should like here to congratulate Lieutenant-Colonel Crisp English, Captain Owen Richards, Captain C. H. S. Frankau, Captain John Fraser, Captain Heycraft, and Captain Lindsey on the success they obtained.

---

CORNWALL COUNTY ASYLUM.—At the last meeting of the asylum committee it was reported that there were 1236 patients in the institution, including 228 from the Bristol asylum. The cost of maintenance was 10*s.* 9*d.* per patient weekly, which was the same as ten years ago.

THE LATE DR. NICHOLAS PERCY MARSH.—Dr. N. P. Marsh, who died at his residence in Liverpool on Nov. 26th, aged 56, was a well-known medical man who paid particular attention to the diseases of children. He qualified by taking the M.R.C.S. in 1882, and in the following year graduated M.B. at the University of London. He was physician to the Liverpool Infirmary for Children and Infants' Orphan Asylum, and consulting physician to the Children's Convalescent Home, West Kirby. He leaves a widow, two daughters, and a son who is attached to the Royal Army Medical Corps in France.

## RESPONSIBILITY FOR CRIME.

BY SIR BRYAN DONKIN, M.D. OXON., F.R.C.P. LOND.,

LATE ONE OF H.M. COMMISSIONERS OF PRISONS.

A leading article in THE LANCET of August 14th, 1915, entitled "Crime and Legal Insanity," and ostensibly occasioned by the report of the Subcommittee on Crime and Punishment which was finally accepted at the annual meeting of the British Medical Association this year, has lately attracted my attention. Of the six recommendations made in this report the writer of the article appears to me to have missed wholly the great importance of the first, and to have so handled the last as to make it a text for assuming, without any warrant whatever, that the legal and administrative authorities who have to do with such matters have not yet learned to appreciate the full importance of the study of insanity in relation to crime. I propose to confine my comments to the treatment of the two points above mentioned, as the writer passes over the intermediate recommendations, most of them of great value, and some involving important improvements in criminal practice, with the mere remark that they undeniably claim attention.

I. The first recommendation of the subcommittee fully endorses an important modification of the long-accepted legal definition of responsibility, a modification which if adopted in practice will accomplish the desire, expressed many years ago by Sir James FitzJames Stephen, to "remove a misconception between the two great professions of Law and Medicine" that has up till now been the cause of much difficulty in the proper adaptation of punishment to crime.

Until the publication of Dr. C. A. Mercier's well-known work on "Criminal Responsibility" in 1905 no authoritative proposal to amend the old legal definition was forthcoming. This definition, occasioned by the discussion which followed on the Macnaghten case in 1843, made the responsibility or irresponsibility of the offender to depend entirely upon his knowledge of the nature, quality, and wrongness of his act. Dr. Mercier, among other valuable suggestions for reforming this accepted definition, proposed a very weighty addition:—viz., that the accused person, in order to be justly regarded as fully responsible for the crime charged against him, must know *and appreciate* the nature, quality, and wrongness of the act, *and the circumstances* in which it is done. There is neither space nor need to enlarge here upon the patent value and far-stretching importance of this addition. The subject is treated clearly and at length in the chapter on the "Answers of the Judges" in Dr. Mercier's book. What is necessary to insist upon now is that the first recommendation in the subcommittee's report, referred to in THE LANCET article, consists *entirely* of this addition. The article, however, totally ignores this striking recommendation, and makes the inaccurate and misleading statement that the report "commences with the definition of legal responsibility for crime which has not varied much since the Macnaghten case called marked attention to the subject in 1843."

II. The last of the six opinions expressed in the subcommittee's report is "that it is desirable that

medical officers of prisons should have had experience in the diagnosis and treatment of insanity." Taking this as a text, and inferring that medical officers of prisons have not had such experience, the writer of the article proceeds to make other assumptions and to draw conclusions which not only are incorrect, but also seriously disparage the prison medical service.

The soundness of the subcommittee's opinion that medical officers of prisons should have had experience in the diagnosis and experience of insanity goes without saying; but it is difficult to see why this opinion was but barely formulated in the report without explanation or comment of any kind. For many years it has been necessary that candidates for the post of deputy medical officer in the prison service should have had such experience over and above the instruction gained by the attendance at lectures and clinical demonstrations on insanity which is required for the qualification of all medical students. At all the large prisons, including all the convict prisons, all the prisons in the metropolis, and several in the provinces, the deputy medical officers work many years under experienced seniors, and have thus a wide scope for acquiring knowledge of mental disorder and defect. From four of the larger local prisons alone thousands of reports on the mental condition of prisoners are sent annually to the courts. In my opinion, and that of many others, the whole-time medical officers of prisons can, as a class, be justly regarded as experts in mental diagnosis of a high order, and are all of them much more than alive to the elementary dicta which the writer of the article in THE LANCET takes the pains to set forth for the information of the administrative authorities "who have to do with matters of this sort." It is certainly true, however, that at many of the smaller prisons where it is, for financial reasons, out of the question to establish a whole-time medical officer, local practitioners are appointed, some of whom have not had the special experience in mental work which is required in the case of medical officers who are civil servants. But preference is always given to those who have had such experience, and many of them possess it in a high degree. Moreover, in cases of doubt, expert assistance is always available, and as no sentences of penal servitude are undergone in prisons of this class, any subject of mental disorder undetected before trial and sentence would immediately come under expert observation, and would be treated as a criminal lunatic or as a mental defective, as the case might be. It might doubtless be a counsel of perfection to ordain that a specially experienced medical man should examine every prisoner received into any prison with a view to reporting on his mental condition before trial, whether or no there were any manifest symptoms of disorder, and whether or no the crime charged against him were such as to suggest disorder. But in the large majority of such cases prolonged observation would be imperative before any opinion of value could be formed, and many prisoners who might, later, be found to be insane would necessarily have to stand their trial in any case. Again, far the greater and increasing proportion of indictable offences are dealt with by courts of summary jurisdiction, and thus large numbers are convicted before coming to prison at all. In 1912 the Judicial Statistics, from which the writer of the article quotes for some of his facts, give 54,244 out of 67,530 thus summarily convicted, and thus mostly prevented from undergoing any medical examination before trial. This class of cases, of course, contains many of those prisoners who are found insane and certified after trial.

The writer of the article, besides ignoring all this, assumes that because a criminal lunatic guilty of arson was certified and sent to an asylum after conviction, he was therefore not previously subjected to careful medical examination. Here again he omits or is unaware of the fact that in hundreds of cases every year medical reports of mental defect in prisoners are sent to the police and to the courts and are disregarded.

When commenting on the facts, gathered from the Judicial Statistics, that in over 78 per cent. of murder cases received into asylums in 1912 the insanity was recognised before trial, while in patients guilty of other crimes the insanity has been thus recognised in only 20 per cent., the writer of the article makes the glaringly fallacious and gratuitous statement that "the insanity must have preceded *and caused* the criminal acts in about the same proportion of the non-homicidal as of the homicidal cases": a statement, to anyone familiar with criminals, absurd on the face of it. He then proceeds to re-state the fact, so well known, as far as it *is* a fact, to even the least experienced prison officer, that the crime of arson is so frequently associated with "insanity" that it should at once create suspicion as to the offender's soundness of mind, and cause an inquiry to be held and reported to the court. It may fairly be said that on this matter at least the specialist in lunacy has something to learn from the prison medical officer. It is true that arson is so frequently associated with either mental defect or mental disorder that unsoundness of some kind is suspected in every case and, when found, always reported. In fact, the tendency is rather to exaggerate the number of arson cases in which mental unsoundness is a factor. Careful examination shows that some crimes of arson are committed during drunkenness, others from spite, others to obtain insurance money, and in such cases prolonged observation in prison has shown that neither the history nor the conduct of the prisoner furnishes any support for the inference of mental defect or of insanity. As a matter of fact, arson is far more frequently associated with mental defect than with certifiable insanity, and I mean here by "certifiable insanity" such insanity as would justify, *in the opinion of the lunacy specialist*, the detention of the criminal in an asylum. So far from the prison doctors being unable or unwilling to recognise mental defect and mental disorder in the inmates of prisons, it is notorious that when they have recognised either, and the subject has been accordingly transferred to an asylum, the lunacy specialist frequently discharges him. In this context I would remark that the arson cases admitted into the Broadmoor Criminal Asylum in 1914 were only three in number, and that only 19 cases were remaining there at the end of that year, the asylum having been opened in 1863.

I desire to draw special attention to the total omission of mention of mental defect, as distinguished from certifiable insanity, that marks an article apparently written with the sole purpose of proving that inadequate attention is given by the prison authorities and medical officers to mental unsoundness in relation to crime. This contention is so wide of the mark that I find it "difficult to believe," to quote the writer's own phrase, that the article

could have been written by anyone duly informed of its subject-matter. I therefore think it well to give a brief account, from my own personal knowledge and experience, of prison work on this subject in recent years. I became one of H.M. Commissioners of Prisons about 17 years ago, being the first medical man so appointed. I was told by some medical friends and lunacy experts that I should find but scant attention paid to the mental state of prisoners; that only glaring cases of insanity were recognised, and that undiagnosed cases of dementia paralytica and many other forms of insanity were frequent. I had a vision, indeed, of an Augean stable and an up-hill task. I sought for these deplorable defects, but did not find them. What I did find was that very many cases of mental defect were recognised by the medical officers and classed and treated as such under official authority, but that they were necessarily sent out to freedom either on licence or at the expiration of their sentences, owing to their not being "certifiably insane." Repeated representations by the Prison Commissioners of the urgent need for measures for the prolonged control of such criminals, often quite as harmful and dangerous to the community as any "lunatic" at large, met with the response that any such measures would require fresh legislation. In a few years other important bodies of persons interested in social reform began to agitate for better care and control of the feeble-minded generally, and in 1904 a Royal Commission, of which I was a member, was appointed to inquire into the whole matter. The lunacy experts, some of whom now essay to lecture the prison service upon its laxity in recognising insanity in criminals, were either blind to mental defect as distinguished from mental disorder, or ignorant of its social importance and of the considerable part it takes as a factor in the production of crime. Certainly not a finger was raised by any lunacy authority or specialist to remedy these evils until the Royal Commission was appointed. The part that they did take in assisting that Commission's work was not a leading but a following part. The initiative to the appointment of the Commission came not from them but, at least to a very large extent, from the prison service. The Report referred to above of the subcommittee of the British Medical Association, a report which has been received with practically unanimous approval by the medical and the legal professions, is due greatly, if not mainly, to Dr. James Scott, a former prison medical officer and governor of Holloway Prison, known widely to both these professions, and recognised, to my own personal knowledge, by many leading physicians for mental disorders as a man whose opinions on cases of suspected lunacy are of the highest value. I feel fully justified in making the general assertion that the prison service has nothing to learn about mental deficiency and disorder in criminals from lunacy specialists. Such an article as that which has occasioned my criticism shows that the writer has tried to put the boot on the wrong leg.

London.

THE Mental After-Care Association for Poor Persons Convalescent or Recovered from Institutions for the Insane earnestly appeals for funds to carry on and extend its work. The association, which is the only one of its kind in the United Kingdom, assists cases in all parts of the country in various ways. The secretary is Mr. H. Thornhill Roxby, Church House, Westminster, S.W.

## THE INCIDENCE OF RENAL RETINITIS IN SOLDIERS SUFFERING FROM EPIDEMIC NEPHRITIS.

BY R. FOSTER MOORE, M.A., B.C. CANTAB., F.R.C.S. ENG.,

ASSISTANT SURGEON, ROYAL LONDON OPHTHALMIC HOSPITAL; CHIEF ASSISTANT, OPHTHALMIC DEPARTMENT, ST. BARTHOLOMEW'S HOSPITAL.

THE following notes are the result of the ophthalmoscopic examination of 119 soldiers suffering from epidemic nephritis recently returned from France, and although they are lacking in completeness in some particulars, it has seemed worth while publishing them.

For the opportunity to examine the men I am indebted to facilities given me by Major J. H. Drysdale, R.A.M.C. (T.), Major Horton-Smith Hartley, C.V.O., R.A.M.C. (T.), and Captain Langdon Brown, R.A.M.C. (T.). Captain L. G. Crossman, R.A.M.C. (T.), has given me much help, and I have been entirely dependent upon his excellent notes for such clinical histories and particulars of the cases under his care as have been included here.

The ophthalmic examinations only have been carried out by myself.

Many of the sufferers were examined once only; those however in whom retinitis developed have each been examined on a number of occasions, and this is also true of a considerable portion of the remainder. Of the earliest batches to arrive I examined 91 cases consecutively without finding anything more significant than an occasional, very small, more or less circular retinal hæmorrhage, and it was only later that cases with retinitis came under notice.

The average age of 81 men was 29·5 years, and none was under the age of 20. All were investigated very fully, and I have the authority of the physicians under whose care they were for stating, that they presented the essential signs and symptoms of an acute nephritis. Œdema of greater or less degree was an almost constant accompaniment.

In 5 cases renal retinitis either was present or developed whilst the patient was under observation. Of the remaining 114 there were 7 in whom very small retinal hæmorrhages were present, and 107 with normal fundi. The retinal hæmorrhages in the seven cases referred to were very small and very few, and small retinal hæmorrhages are of such common occurrence in patients who are seriously out of health from any cause, that I think no special significance need be attached to their occurrence in these cases. They were not found only in those cases in which vomiting had occurred.

*Blood pressure.*—The average systolic blood pressure in 70 men with normal fundi was 143 mm., whereas that of the 5 men in whom retinitis developed was 180 mm.

*Time of onset.*—The average interval between the date of the onset of symptoms and the ophthalmoscopic examination in those without retinitis was 5·4 weeks. In the case of the 5 men in whom retinitis developed the interval between the onset of symptoms of nephritis and the development of retinitis, as near as could be judged, was 7 weeks (Case 1), 8 weeks (Case 2), 8 weeks (Case 3), 13 weeks (Case 4), and 9 weeks (Case 5). In this last case the date of onset of symptoms was accurately known, and retinitis was observed in the earliest possible stage of its development.

The following details are abstracted from the full clinical notes.

CASE 1.—Patient aged 32, under the care of Major Drysdale. Passed the medical examination for the General Post Office five years ago. July 23rd: Onset of symptoms. Œdema severe. Fundi normal (Major Mackenzie, 2nd Canadian Hospital). August 2nd: Fundi normal. Systolic blood pressure, 220. Sept. 3rd: Severe uræmic attack after which failure of sight was complained of. Systolic blood pressure, 224. Many uræmic fits followed. Blood serum opaque from the presence of lecithin globulin (Mackenzie Wallis). Most severe retinitis with flat retinal detachments. The patient was examined on Sept. 22nd and 24th and Oct. 5th. Nov. 10th: "There is little change in the patient's general condition. The blood serum is now quite clear. The retinitis has subsided to some extent, but is still most severe."

CASE 2.—Patient aged 26, under the care of Major Drysdale. May 26th: Right eye injured by shrapnel. July 10th: Onset of symptoms with œdema. Sept. 22nd: The œdema has disappeared. The right eye is damaged. The left eye shows renal retinitis with a well-developed star figure, many circular pigment spots such as occur in a retinitis of some standing, and a large transparent retinal detachment. Oct. 5th: No essential change. Systolic blood pressure, 132 mm.

CASE 3.—Patient aged 25, under the care of Major Horton-Smith Hartley. July 10th: Onset of symptoms. Œdema severe. Sept 19th: Several uræmic fits. Systolic blood pressure, 242 mm. Blood serum milky from the presence of lecithin globulin. Retinitis, which is not very severe, and a retinal detachment is present in each eye. Sept. 24th: No change. Oct. 20th: The retinal changes are extraordinarily severe and extensive. Nov. 10th: The retinal detachments have completely disappeared. Circular pigment spots are present. The retinitis is still extraordinarily severe.

CASE 4.—Patient aged 30, under the care of Major Horton-Smith Hartley. June 19th: Onset of symptoms with œdema. August 10th: Fundi natural. Sept. 24th: A moderately severe retinitis is now present in each eye. Systolic blood pressure, 174 mm. Oct. 5th: The retinal changes are further advanced, but there is no other essential change.

CASE 5.—Patient aged 25, under the care of Major Drysdale. July 13th: Onset of symptoms. August 10th: Fundi natural. Systolic blood pressure, 148 mm. He has slight universal œdema. Sept. 24th: Exceedingly early retinitis; the changes are so slight as to leave some doubt as to their nature. Oct 5th: The retinal changes have increased slightly and leave no doubt as to their being of the nature of renal retinitis. Nov. 10th: The œdema persists. Blood pressure, 182 mm. He has now at each yellow spot a small definite star figure of fine texture with three or four spots of soft-edged exudate and one retinal hæmorrhage. This is a particularly mild form of retinitis, and contrasts markedly with Cases 1 and 3.

*Retinitis.*—The retinitis which developed did not differ in appearance in any essential from the retinitis of chronic nephritis. In each of the men in whom it occurred the general symptoms were severe, and in general, the more severe these symptoms the more extensive were the changes in the retina. Thus the severity of the retinitis varied from the very mildest form in Case 5, to the most extensive and severe form in Cases 1 and 3. In Case 5 the fundi were normal on August 10th. On Sept. 24th a single very small area of soft-edged exudate was present in the right eye, and in the left eye one small oat-shaped spot was present in a line radiating from the yellow spot; this spot appeared to be of the nature of the elements which constitute a star figure. Thus the very earliest signs of renal retinitis were present at this date—i.e., nine weeks after the onset of symptoms. On Nov. 10th there was now a definite star figure present in each eye of very fine texture. The changes then were of the mildest type. On the other hand, in Cases 1 and 3 the retinal changes were most extensive and severe. I have not seen more marked changes in any form of nephritis. In each case the changes were very similar. The whole of the central region was diffusely infiltrated by most extensive exudate. In the earlier stages more or less isolated areas of soft-edged exudate were present here, but these areas, by confluence, gave rise to the conglomerate masses seen later, and it was then only towards the periphery of the fundus that isolated areas were to be seen. The identity of a coarse-textured star figure was soon lost by confluence of its elements. The surface of the retina had an uneven, almost craggy appearance, evidently from the presence of subretinal exudate, and in Case 3 a large transparent detachment of the retina was present in the lower part of each eye. The other changes of renal retinitis—viz., distension of the vessels which were in places obscured by exudate, complete disappearance of the edges of the disc, and hæmorrhages—were all present. The hæmorrhages were neither very numerous nor very large.

In Cases 1, 2, and 3 retinal detachment occurred, and of these Cases 2 and 3 were of the transparent globular type, which are due to the presence of serous fluid in the subretinal space. In Case 1 the detachments were of the flat variety, such as are due to the presence of solid exudate under the retina. The incidence of detachment in these cases is evidence of the severity of the retinitis, but has no significance beyond this; it is not simply a local expression of the general œdema, but is dependent upon the local disease in the retina. These detachments probably always disappear if the patient survives.[1]

The relation between an increased blood pressure and the development of retinitis is brought out by these cases. for the average systolic pressure of 70 cases with normal fundi was 143 mm., whereas that of the 5 cases in which retinitis developed was 180 mm. This however does not at all necessarily imply that local vascular disease is the main factor in the development of retinitis, and indeed the changes present were for the most part of the type which is usually considered to be an expression of the toxic element in the disease.

Circular pigment spots which are produced by the proliferation of the pigment epithelium, and which are seen in a retinitis of some standing, were present in two cases.

There is no doubt that the very great majority of these 119 men were suffering from a primary acute nephritis, and were not the subjects of a pre-existing chronic nephritis. Having regard however to the insidiousness of onset of chronic nephritis, Captain Crossman made especially careful inquiry in the cases of the five men who developed retinitis, with a view to discovering evidence of the existence of a previous nephritis. In one case only was any evidence of this obtained; one man had been passed for the General Post Office after medical examination five years previously. It cannot be positively stated that the remaining four men were not the subjects of a previous nephritis, but there is certainly no discoverable reason to believe that they were.

[1] These three cases, along with 10 others in which retinal detachment occurred in renal retinitis, are reported at length in the forthcoming Vol. XX., Part II., of the Royal London Ophthalmic Hospital (Moorfields) Reports.

It would thus appear at first sight that retinitis may occur in a primary acute nephritis. Sir Wilmot Herringham says with regard to this point: "Retinitis albuminurica has been said to occur in acute cases but the reports are unconvincing. As a practical rule its existence is a proof that the disease is of long standing." Moreover, I have had the opportunity of examining a considerable number of cases of acute nephritis during the last three years, but in no case has retinitis been present. If now the present cases are considered with regard to this point, it will be seen that a very large majority have run the course of an acute nephritis, ending in temporary recovery without the development of retinitis. On the other hand, the course of the disease in some cases has been more progressive, and instead of improvement towards recovery occurring, the œdema and urinary signs have persisted, the blood pressure has increased, and uræmic symptoms have appeared. The acute disease has merged gradually into a condition of chronic nephritis, and it is in this group of cases that retinitis has occurred.

It should be stated that some cases have run a more mild chronic course without developing retinitis, thus two men have been watched for 20 and 21 weeks respectively, and although symptoms persist the fundi are normal. It would seem then that strength is lent to the view, that retinitis does not occur in primary acute nephritis, but that when this gradually and directly merges into a condition of chronic nephritis, retinitis may coincidently develop. In this latter case the signs of retinitis may be seen as early as within seven weeks (Case 1) or nine weeks (Case 5) of the onset of symptoms of the acute disease.

*Lipæmia.*—In four cases, in three of which retinitis was present, the blood serum was opalescent, and in two of them it was especially dense. This opacity was found by Mr. Mackenzie Wallis to be due to the presence of lecithin globulin. The fundi in these cases did not show the very characteristic picture of "lipæmia retinalis," and they lend support to a view I have expressed elsewhere,[2] that it is probably only in diabetes, that lipæmia attains a sufficiently high degree to give rise to the appearances of lipæmia retinalis.

[2] THE LANCET, Feb. 20th, 1915, p. 366.

THE Irish Medical Committee, satisfied with the spirit in which their representations on the medical certification question have been met by the Irish Insurance Commissioners, are recommending the medical profession to accept the agreement recently distributed in Ireland by the Commissioners.

PRECAUTIONS AGAINST FIRE AT CHRISTMAS ENTERTAINMENTS.—The British Fire Prevention Committee have issued a timely warning with regard to the prevention of fire in buildings used for the entertainment of soldiers and sailors. On a sheet of foolscap size, which can be obtained at 8, Waterloo-place, Pall Mall, S.W., ten useful maxims are printed which, if put into practice, should greatly minimise the risk of fire.

NATIONAL CLEAN MILK SOCIETY.—This society, whose object is to raise the hygienic standard of milk and milk products and to educate the public to the importance of a clean and wholesome milk-supply, has issued a two-page leaflet explaining how it is proposed to carry out these objects. The assistance of the Board of Agriculture and other authorities will be sought in helping farmers and dairy owners to free their herds from tuberculosis, the assistance of railway companies and of the public will be evoked, and efforts made to promote legislation. Particulars and information can be obtained from the honorary secretary, 2, Soho-square, London, W.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### BULLET WOUND OF THE ŒSOPHAGUS.

BY A. W. NUTHALL, F.R.C.S. ENG.,
CAPTAIN, R.A.M.C. (T.).

Bullet wounds of the œsophagus are so rarely met with as to merit being recorded. I have only seen this one case amongst some 8000 wounded treated in a casualty clearing station in six months. From its close anatomical relationship to the air passages, carotid and jugular vessels, and pneumogastric nerve it is probable that the injury to the œsophagus is overshadowed by the more serious, if not immediately fatal, effects produced by wounds of one or more of these important structures. In the present instance perforation of the œsophagus coexisted with a wound of the internal jugular vein; the formation of a prevertebral abscess, which ruptured into the pleural cavity, directly led to a fatal end.

A lance-corporal was shot through the neck on June 6th, 1915. He was received into our clearing station on the 7th, about 24 hours later, in a condition of grave collapse, with urgent dyspnœa. He stated that he could not swallow, and that he had coughed up a little blood shortly after being wounded. He reacted fairly well to stimulation and was relieved by a small injection of morphia. On the 8th and 9th he was rather better, though very weak. Some discomfort in swallowing was complained of on the 8th, but soon passed off. He drew attention to a "funny feeling of numbness and weakness" of the right arm, but no paralysis or anæsthesia was found to be present; the right hand, however, was cold and clammy as compared with the left. The pupils were equal and active, the heart's action rapid, regular, and feeble, and dyspnœa continued to be urgent throughout. During the night of the 9th–10th very sudden and severe (pleuritic) pain in the right side occurred; in the morning the absence of breath-sounds and signs of a pleural effusion were noted. Air-hunger increased, the heart rapidly failed, and he died at 7.30 P.M. on June 10th.

At the post-mortem examination it was found that the entry wound was situated in the middle of the left sterno-mastoid, the track of the bullet passing across the neck backwards and downwards to the right, the uninjured Mauser bullet lying on the spine of the right scapula. It had passed between the œsophagus and the cervical spine, perforating the posterior wall of the gullet, behind the common carotid artery, wounded the right internal jugular vein on its posterior surface, crossed in front of the cervical nerve-trunks, to come to rest on the scapula. The perforation of the œsophagus had caused, by leakage and infection, a prevertebral abscess into which projected a small button of blood-clot from a hole in the internal jugular vein. A second (larger) prevertebral abscess, below the former, had burst through the dome of the pleura on its inner aspect into the pleural cavity. The right pleura contained masses of blood clot and about a pint of sanguineo-purulent fluid. The lung was completely collapsed and retracted. The vagus nerve appeared to be intact. The cervical sympathetic could not be traced in the neck, the tissues being suffused with blood and matted together by inflammatory changes.

## SUBCUTANEOUS INJECTION OF DISTILLED WATER FOR MULTIPLE ULCERS.

BY G. ARBOUR STEPHENS, M.D., B.S., B.SC. LOND.

THE patient was a woman, aged 63, who had been suffering for over six months from ulcers of the thighs and breasts. On the front of the left thigh were six ulcers, 1½ inches in diameter, separated from one another by narrow bands of skin and with edges undermined. They were discharging considerably and looked almost gangrenous. On the back of the right thigh was a healed ulcer, 2½ inches in diameter, whilst on its anterior surface was one of similar size, but showing no signs of healing. On the right breast was an unhealed ulcer and on the left a nearly healed one of similar size.

Mercury and iodides had been tried internally and lotio nigra, red wash, and fomentations externally had been tried with no success, so I suggested that a subcutaneous injection of distilled water be given, and if necessary repeated two or three times. At the same time the patient was given 3-grain doses of calcium iodide three times daily for four weeks. After the first injection, which was given on August 19th in the loose tissue below the shoulder-blade, her general condition was greatly improved, whilst the ulcers looked healthy and healing. The second injection was given on August 26th and the third on Sept. 13th, by which time nearly all the ulcers except that on the thigh had closed and the smaller ones were covered with healthy skin. At the same time the patient's general appearance was greatly improved.

No blood test was employed, so it is difficult to state definitely that the ulcers were syphilitic, but the appearances were very suggestive.

Some months ago I wrote on the value of injections of distilled water in syphilis[1] and have had a large number of good results since then. The theory advanced was that the surface tension of the corpuscles was so affected as to allow of the more ready mobilisation of the necessary antibodies, and, I would add, improve their diapedic powers. Much depends on the rate at which diapedesis occurs, and in a disease such as the one herein reported an increased rate of diapedesis seems to have been induced, with very successful results.

The local treatment employed was petrol for washing the wounds, and when completely evaporated boric acid powder was dusted on the wounds. Two years ago I advocated the employment of petrol,[2] and since then its value in the local treatment of wounds has been thoroughly tested and proved.

Water is of no value for cleaning wounds in which colloidal matter has accumulated, whilst petrol, which dissolves fats and alters the surface tension, produces a clean wound very quickly, and provided it is allowed to evaporate freely there is no pain.

Swansea.

[1] Brit. Med. Jour., April 5th, 1915.
[2] Dublin Journal of Medical Science, December, 1913.

PRESENTATION TO A MEDICAL MAN.—At the Great Western Railway Company's general offices at Bristol on Nov. 28th the members of the G.W.R. employees' branch of the St. John Ambulance Association presented Dr. John Thompson Wallace with an instrument case in appreciation of his services as honorary lecturer.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### SECTION OF LARYNGOLOGY.

*Tracheitis Sicca.—Histology of a Nasopharyngeal Fibroma.—Exhibition of Cases and Specimens.*

A MEETING of this section was held on Dec. 3rd, Dr. JAMES DONELAN, Vice-President, being in the chair.

Dr. H. LAMBERT LACK showed a case of Tracheitis Sicca. The patient, a boy aged 7, had suffered for five weeks from stridor and dyspnœa for which no cause could be found. When examined the lumen of the trachea was almost filled by a mass of large black crusts. The larynx was natural, the voice was good, and there were no crusts in the pharynx or nose, although the latter was rather wide with a tendency to dryness. Treatment by steam inhalations had no effect; marked cyanosis and dyspnœa continued. Small doses of potassium iodide were then given and the throat was sprayed by Seigle's steam spray. Great improvement resulted, the stridor and dyspnœa disappeared, although crusts were still present. The cause of the rare condition was quite obscure.—Dr. F. DE HAVILLAND HALL had found ammonium chloride very beneficial when treating a similar case.

Dr. IRWIN MOORE gave a demonstration of the Histology of a Nasopharyngeal Fibroma. He pointed out that there was no real capsule, but a covering of compressed mucous membrane. The blood-vessels were found chiefly in the centre of the tumour and not at the periphery. The fact that these vessels were merely spaces in the fibrous tissue and had no muscular walls accounted for the severe bleeding when removal was attempted. He advocated removal through the mouth, tying the palate forward without splitting it.—Sir WILLIAM MILLIGAN thought that the external carotid should be ligatured.—Mr. HERBERT TILLEY felt that no one method of removal applied to all cases; if a fibroma had become attached to the interior of the antrum it was impossible to remove it without operating through the face.—Dr. LAMBERT LACK agreed with Mr. Tilley. Some fibromata could be removed quite successfully by means of a thick wire snare; others required an external operation, and others were inaccessible to any surgery.—Mr. E. D. D. DAVIS considered that splitting the palate was a mistake; just as good access could be obtained by pulling the palate forward.

The following cases and specimens were shown:—

Mr. F. A. ROSE: A case of Paralysis of the Right Vocal Cord resulting from a bullet wound.

Mr. CHARLES A. PARKER: A case of Unilateral Paralysis of the Soft Palate and Larynx.

Mr. HERBERT TILLEY: A case of Chronic Dacryocystitis cured by West's intranasal operation after failure by external operation.

Mr. W. M. MOLLISON: 1. A case of Carcinoma of the Superior Maxilla with Secondary Glands in the Neck. A very successful case, in which the palate had been preserved at the time of operation, and there was no recurrence after two years. 2. A case of Sarcoma of the Ethmoid operated on through Moure's incision.

Dr. LAMBERT LACK: Two specimens of Exostosis from the Frontal Sinuses and Ethmoidal Cells.

Dr. D. R. PATERSON: A large irregular piece of Bone which had been impacted in the œsophagus and removed by the direct method. In order to obtain a good view he had used a 20 mm. œsophagus tube. The base of the bone measured 1 inch by ¾ inch.—Dr. WILLIAM HILL approved of the use of large œsophagus tubes; he habitually used an 18 mm. tube himself in the case of adults, never with any ill results.

Dr. DAN MCKENZIE: 1. Papilloma of the Larynx in a child treated under suspension laryngoscopy. After the individual papillomata had been removed their bases were curetted. There was no recurrence after one year and the voice was good. 2. A case of long-continued Spasm of the Œsophagus.

# Reviews and Notices of Books.

*The Biology and Treatment of Venereal Diseases and the Biology of Inflammation and its Relationship to Malignant Disease.*

By J. E. R. McDONAGH, F.R.C.S. Eng., Surgeon to Outpatients, London Lock Hospital, &c. London: Harrison and Sons. 1915. Pp. 625. Price £1 10*s*.

THE biology and treatment of those diseases which are classed as venereal have a vast importance for every medical man, for in one or other form they are met with, not only in the work of the general practitioner, but in that of every surgeon, physician, and specialist. This book is written by one who has done a large amount of work in endeavouring to unravel the problem of the nature of the organism causing syphilis, and is certain to arouse considerable interest.

The time is not very far past when all venereal diseases were supposed to be one in nature, though their manifestations greatly differed from one another. As late as the fourth decade of the last century it was customary in many of the hospitals of London to treat gonorrhœa with mercury, with unsatisfactory results, as was acknowledged at the time. The first step in advance was the separation of gonorrhœa from the other forms of venereal disease, but many more years had to elapse before it was recognised by all that the soft chancre was entirely distinct from the hard sore, though occasionally a double infection might occur.

The history of the search for the *causa causans* of syphilis is full of interest, and Mr. McDonagh has here presented it to us clearly. He describes the discussion which is still going on as to the true nature of the spirochæta pallida; is it a protozoon or is it a bacterium? If the spirochæte is the sole cause of syphilis, Mr. McDonagh tells us that it is difficult to explain why the incubation period is so long and why one or two injections of salvarsan do not always effect a cure. These difficulties are explained by the author on the theory that the spirochæte is merely the male gamete of a protozoon, and that many other forms occur. He has worked out the whole cycle of development, and in the chapter devoted to this cycle are to be found many interesting photographs showing the various stages. It is hardly necessary to mention that this explanation of the position of the spirochæte has not been accepted by everyone, though there is undoubtedly much to be said for it.

Interesting chapters are those on the Wassermann and the Abderhalden tests, and the difficult subject of the true meaning and mode of action of these tests is fully discussed. The various types of primary sore are well illustrated by some coloured plates. The treatment of syphilis is given very fully, and the author tells us that successful results may be obtained with the use of many different methods of treatment, but he is inclined to begin the treatment of nearly all cases with the injection of neosalvarsan.

The section dealing with the soft sore is good and contains some excellent illustrations. To gonorrhœa some ninety pages are devoted. The conclusions at which the author arrives are clearly stated. He regards the use of a vaccine as necessary in many cases before a cure can be obtained, and the most potent agent he considers to be a vaccine sensitised with a human antigonococcal serum. A chapter is devoted to the minor venereal diseases, such as condyloma acuminatum and granuloma inguinale. The eugenic aspect of venereal disease is of no little importance and it is fully discussed. Lastly, we have a section on the biology of inflammation and its relation to malignant disease, and though this is of great value it does not appear to be very germane to the main subject with which the book deals.

To sum up, Mr. McDonagh has made a distinctly valuable addition to the literature of the venereal diseases, especially to that of syphilis, the most important of them all. The work is excellently printed and illustrated.

---

*A Text-book of Surgery.*

By RICHARD WARREN, M.D., M.Ch. Oxon., F.R.C.S. Eng., Assistant Surgeon to, and Teacher of Clinical Surgery at, the London Hospital. With 504 original illustrations. In two volumes. London: J. and A. Churchill. Pp. 1400. Price 25*s*. net.

THE advent of a new text-book by a new author on a subject of such importance as general surgery is always a matter of considerable interest to teachers, practitioners, and students. It is probably true that since the time of Erichsen there has been no great outstanding text-book on surgery which has held the field for any length of time, and this fact appears on consideration to be only right and proper seeing that advance in surgery has been so enormous and so rapid that in a short space of time any text-book becomes out of date and a new one is welcome. To a writer of text-books it must be a matter of great difficulty to decide how much matter to put in and how much to leave out; to insert all that a student is required to know means such an enormous tome that the reader of it grows weary and confused. Subsidiary branches of the science also have grown and require consideration. Taking, for instance, bacteriology and pathology, a proper understanding of these subjects is essential to the modern surgeon; without them he cannot grasp the elements of his work, and hence their inclusion in works on surgery. But their position is now similar to that of anatomy in older text-books; it has been agreed that anatomy should be taught separately, essential though it is to the surgeon, and it seems likely that bacteriology will soon have to share a similar fate. In the book before us Mr. Warren is to be congratulated on making a judicious compromise, incorporating sufficient to instruct without bewildering.

Special features of the book are the sections dealing with subjects in which great advance has been made in the last few years—namely, injuries and affections of bones, blood-vessels, joints, the air-passages, abdomen, and urinary system. The student is given a clear account of the best methods at present in use, and very helpfully the author directs attention particularly to those which in his experience have proved sound and satisfactory. We note with gratitude that many of the more obsolete methods which have been preserved in other text-books by generations of authors, to the confusion of students, have been dropped. It can be stated at once that the book is a good one, and if there is a criticism to make it is that it is rather too long, the two volumes together running into over 1400 pages. From the point of view of the student it might be desirable that the subject should be presented in a slightly abridged form. The difficulty of doing so

of course is great, but it might be possible without reducing efficiency.

The work itself is produced in admirable style; the type is clear and the illustrations excellent. We believe that the book will take a good place in the world of surgery.

---

*A Manual for Health Officers.*

By J. SCOTT MACNUTT, A.B., S.B., sometime Health Officer of Orange, New Jersey, and Member of the Board of Examiners of Health Officers and Sanitary Inspectors of New Jersey; Lecturer on Public Health Service in the Massachusetts Institute of Technology. With a Foreword by WILLIAM T. SEDGWICK, Professor of Biology and Public Health in the Massachusetts Institute of Technology. First edition. London: Chapman and Hall, Limited; New York: John Wiley and Sons. 1915. Pp. 650. Price 12*s.* 6*d.* net.

As the title indicates, the object of this volume is to furnish a general guide for health officers and others interested in public health work. The book is divided into two parts, the first of which gives a general description of the organisation and powers of health authorities, while the second deals with public health administration and has chapters devoted to communicable diseases, child hygiene, milk- and other food-supplies, water-supplies, housing and industrial hygiene, nuisances, sanitary law, and vital statistics. There are also a number of appendices on various matters relating to public health. There are no illustrations.

Most of the subjects are dealt with from the American standpoint, and perhaps the chief interest of the book to the British reader lies in the opportunity which it affords of comparing American methods of public health administration with those which obtain in this country. Thus it may come as a surprise to many that the health officer in America need not necessarily be a qualified medical man. The author tells us that in the United States of America men hold office as health officers who have not been trained in medicine, but in biology or sanitary engineering. Executive powers for dealing with public health matters are conferred upon local boards of health, which, in greater or less degree, discharge the functions of our sanitary authorities. The mode of election of members to local boards of health is not made clear. Mr. MacNutt states that such boards are not always popularly elected bodies, but that the members may be appointed by the mayor. In the author's opinion the board should be as small as possible—not over five members, as experience has shown that larger boards are less likely to act harmoniously or to perform effective work. It is desirable that at least one member of the board should be a physician, particularly if the health officer be not a medical man. The board of health must also have an official medical representative, sometimes called "medical inspector" or "board of health physician," whose chief duty lies in diagnosing doubtful or suspected cases of communicable disease and in determining whether or not cases may with safety be released from quarantine. If the health officer is a medical man he generally undertakes such duties, but if not, a physician (who may or may not be a member of the board) is often designated for the purpose. Other members of the public health staff may include sanitary inspectors, public health nurses, and veterinarians, while a certain number of workmen may be employed in destroying mosquito breeding places and the like. The services of a legal adviser are also necessary, and this function may be fulfilled by the city attorney, or the board may appoint a counsel of their own. A laboratory service for the examination of morbid products to assist in the diagnosis of infectious diseases may likewise be instituted. The activities of the board of health are, of course, regulated and directed by the powers conferred upon it by the State legislature as expressed in the public health statutes. The powers granted by these statutes are often stated in general terms, but the modern tendency is to define the powers of health authorities more exactly and to confine them within closer limits.

Just as local boards of health are entrusted with the care of the public health of local communities, so the State health authorities exercise control over those matters which are common to the communities throughout the State. State health departments represent a later form of organisation than the local, having been called into existence by the natural development of sanitary questions relating to the State as a whole. We are told by Mr. MacNutt that Massachusetts was the first State in America to form a State board of health, and a study of the statute which created this board and defined its powers shows that its functions were entirely advisory in character. Thus the board was to "make investigations," "gather information for diffusion among the people," and "make suggestions as to legislative action." This is still perhaps the most important function of State boards of health, but of recent years there have been added, as the need for State-wide action became apparent, certain functions of an executive nature. These are exemplified in supervision of foods and drugs, of water-supplies, and of sewage disposal, and in the comprehensive registration of vital statistics. State health authorities seldom interfere with purely local matters except when they have a State or inter-community bearing—i.e., when other districts than the one in question are injured or threatened. There is a tendency at the present time to limit the degree of supervision of the State over local boards of health—in fact, the supervision exercised is, in many instances, insufficient to maintain proper minimum standards by the local boards.

What is known in America as "publicity" is apparently regarded as one of the important functions of the State health authority. No phase of public health work in recent years is more striking than the movement for popular education in matters of hygiene. All sanitary education has a twofold object in view—the improvement of personal hygiene and instruction in the aims and objects of public hygiene. Such education, which is attained by "publicity," is looked upon as the indispensable preliminary of legislation and the necessary accompaniment of effective administrative control. The newspaper press forms a useful medium of public instruction, and many of the data collected by State authorities can be worked up into readable and at the same time educative press material, which would otherwise receive limited attention if only issued in official reports. Many State health departments, with a similar object in view, issue popular bulletins, circulars, posters, and the like, while exhibits are sometimes resorted to in connexion with campaigns against tuberculosis and for improvement of milk-supplies.

Mr. MacNutt's description of the Federal health authorities and the position which they occupy in

relation to the State authorities and the local boards is interesting and may be quoted.

The Federal authorities bear somewhat the same relationship to those of the States that the latter do to the local boards of health; in other words, their functions are properly either interstate or related to the Union of States as a whole and are not exercised except under conditions which cannot be effectively dealt with either by local or by State authorities. This is in accordance with the provision of the Federal Constitution that powers not expressly delegated by that instrument to the Federal Government are reserved by the individual States to themselves. Viewing the national public health scheme as a whole, the bulk of the executive power is lodged with the local boards of health; less with the State boards of health, which are therefore more advisory and less executive; and still less with the Federal Government, which is most advisory and least executive.

The United States has no unified department of health, the activities of the Federal Government for the furtherance of hygiene and sanitation being carried on by a number of separate bureaus. The most important of these is the Public Health Service (formerly the Public Health and Marine Hospital Service) which performs more of the functions of a national health department than any of the other Federal bureaus. The service has charge of the administration of the national maritime quarantine and of the national laws pertaining to medical inspection of immigrants. It conducts investigations in the various States on infectious diseases, maintaining a hygienic laboratory to assist in the elucidation of such problems. It is responsible for the purity and potency of vaccines, antitoxins and serums manufactured for sale in inter-State traffic, and it issues weekly public health reports for circulation among health authorities, setting forth statistical and other data relating to national quarantine, communicable diseases, and mortality throughout the country. Much excellent work has been done by the Public Health Service, the publications of which are well known to those interested in public health in Britain. The Bureau of Chemistry investigates the adulteration of foods, drugs, and liquors, and is responsible for the administration of the Federal Pure Food Act. The Bureau of Animal Industry conducts sanitary and economic investigations in connexion with the milk industry and carries on inspection of meat entering into inter-State traffic, besides inspecting the slaughter-houses in which animals for this trade are slaughtered. The Bureau of the Census includes the Division of Vital Statistics, which collects, analyses, and publishes statistics of population, births, and deaths for the country as a whole and for its various cities, towns, and other civil divisions. The Children's Bureau conducts investigations and disseminates information concerning the protection of child life, particularly as regards prevention of infant mortality.

Mr. MacNutt has succeeded in writing an instructive book which should do much to stimulate interest in public health problems in America.

---

*Manual of Embryology.*

By A. MELVILLE PATERSON, M.D. Edin., F.R.C.S. Eng., Professor of Anatomy in the University of Liverpool. With numerous illustrations. London: Henry Frowde, Hodder and Stoughton. 1915. Pp. 391. Price 10*s.* 6*d.* net.

THE subject matter of this manual, the author tells us, is for the most part the amplified notes of lectures and demonstrations given to medical students. In other instances we have noticed that lecture notes, however excellent in themselves, need extremely careful editing before being published in book form. In the present case the lectures make their collective appearance in print so full of inaccuracies that it is impossible to regard the work as a safe text-book. The illustrations are clear and diagrammatic, but unfortunately they, too, are in some cases so misleading that their very clearness is a defect. The book needs abundant correction before it can be placed in the hands of a medical student.

---

*Lectures on Elementary Anatomy and Physiology, including Short Sketches of Biology, Embryology, and Comparative Anatomy.*

By H. CLIFFORD BARCLAY, M.D., Ch.B. N.Z., F.R.C.S. Edin., M.R.C.S., L.R.C.P. Lond., Major, Royal Army Medical Corps; Medical Superintendent, Waimate Hospital; Examiner in Forensic Medicine, New Zealand University. Second edition. Illustrated. London: Baillière, Tindall, and Cox. 1915. Pp. xiv.–281. Price 6*s.* net.

A FLY-LEAF has been inserted in this work upon which the author has appended the following postscriptum:—

This work was set up in type by Japanese printers who knew not one word of English. The outbreak of war necessitated the departure of the author from Japan and the ultimate completion of the book without his personal supervision. The minor errors, he trusts, will, under the circumstances, be forgiven him.

Even without such a warning the reviewer would be a ruthless person who had the heart to be overcritical in dealing with this volume. One is inclined to forgive much in a book which bears on every page the stamp of genuine, enthusiastic, first-hand work. The Japanese typesetters are to be congratulated. Trivial misprints abound in the book, as is but natural, but in the absence of any knowledge of the language the performance is a great triumph.

As for the style of the book, we can only say that it is a welcome relief. The writing is easy, almost conversational, and is stamped by the author's love of his subject. The present reviewer has had frequent occasion to remark in these columns upon the failure of authors to write even tolerable accounts of the structure and functions of the human body for the use of nurses and those not habitués of the laboratories of medical schools. It is quite certain, however, that Major Barclay can do this difficult thing. That his book will be useful and interesting to the "hospital probationers and teachers and students in high schools," for whom he specially writes, is perfectly certain; and we would add that those who have gone far beyond this stage in the knowledge of anatomy and physiology will be interested and instructed too. With all its natural misprints and little slips, it is the best book of its kind we have read.

---

## MISCELLANEOUS VOLUMES.

WE have received several useful little books dealing with questions of maternity and the up-bringing of children. Early in the year we noticed the first volume of a course of lectures delivered under the auspices of the National Association for the Prevention of Infant Mortality at the Royal Society of Medicine and Charing Cross Hospital Medical School in the winter of 1914. These lectures were continued in February and May, 1915, and have now been issued under the title of *Mothercraft, Part II.* (London: The National League for Physical Education and Improvement. 1915. Pp. 165. Price 3*s.* net). Antenatal and postnatal development of the child, feeding and nursing, cooking for infants and children under school age, first aid in emergencies, and infectious diseases are among the subjects dealt with, and the lecturers include Dr. Florence Willey, Dr. Eric Pritchard,

Dr. Ronald Carter, Dr. Emily Mecredy, Dr. Herbert Cuff, and Dr. Christine M. Murrell. Dr. Joseph Cates outlines a working scheme in antenatal hygiene which has been in successful operation for a short time in the borough of St. Helens, Lancashire. In the coming years the need for the preservation of child life will probably be forced more and more on public attention, and these lectures on mothercraft are a valuable contribution to the subject. The two series of lectures are bound together in one volume at the price of 4*s.*, but it is to be hoped that the authorities may see their way to publish either a cheaper edition or an abridgment of the information contained in them at a lower price, for a large amount of the teaching should form part of the education of every woman of marriageable age.——One of a series of "Harvard Health Talks" (*The Care and Feeding of Children*. By JOHN LOVETT MORSE, M.D., Associate Professor of Pædiatrics, Harvard Medical School. London: Humphry Milford, Oxford University Press. 1914. Pp. 53. Price 2*s.* 6*d.*), among many wise aphorisms, includes in its 53 pages one which stands out branded with the impress of sempiternal truth. It is this: "One of the greatest obstacles to the proper feeding of children is the opposition and interference of grandmothers."——The next volume (*Maternity Letters from Working Women*. Collected by the Women's Coöperative Guild London: G. Bell and Sons. 1915. Pp. 211. Price 2*s.* 6*d.*) consists of a large number of letters from working women giving accounts of their experiences during pregnancy and parturition. There is a preface by the Hon. Herbert Samuel, M.P. The objects of the guild are social and political, and the letters were collected as evidence in favour of one of their movements. The book contains a recital of facts well known to every medical student who has done his maternity cases on a hospital "district."——In *A Compendium of Aids to Home Nursing*, by N. CORBET FLETCHER, M.B., &c. (London: Bale, Sons, and Danielsson. 1915. Pp. 100. Price 6*d.* net), which is a little pocket book, four inches square, is contained a quantity of information as to all the matters a nurse need be acquainted with—physiology, the sick room, infection, disinfection, nursing details, and administration of food and medicine. The compilation has been made with care, the facts are well arranged, and there is no padding. It is not a book to learn the art of nursing from, but a useful *vade mecum* for the already trained nurse.

## CURRENT GERMAN MEDICINE.

*Medicine.*—Professor Ehret (Strassburg i.E.) calls attention to the frequent occurrence of *accidental heart murmurs* in soldiers at times of stress and agitation (MmW40 [1]). The murmur is generally systolic in rhythm, louder on deep inspiration, varying with the position of the body. He regards murmurs of this character as "pneumocardial" in origin, and having no diagnostic importance.

Dr. Fritz Levy, in charge of the bacteriological department of the war isolation hospital at Lügumkloster, found (MmW37) that attacks of *pyrexia* associated *with hydræmia* were constantly associated with *recurrens spirillum* in the blood, even when typhus was also present. The condition tended to become chronic and to persist for several months unless neosalvarsan was given, a single injection of 0·3–0·45 grm. being sufficient to cure most cases. The œdema of the eyelids, feet, or scrotum was such as to suggest beriberi or avitaminosis, but was really a symptom of recurrens. The diagnosis from malaria might be difficult, and the following table is suggested as assisting differential diagnosis:—

| | | Malaria. | Recurrens. | Typhus. |
|---|---|---|---|---|
| 1 | Skin. | ... | Yellow-brown. | Rash on body and limbs. |
| 2 | Complexion. | Anæmic. | Yellow-brown, reddened in fever. | Red, slightly cyanotic. |
| 3 | Tongue. | Furred. | Thick white fur. | Thick white fur.* |
| 4 | Spleen. | Enlarged. | Enlarged. | Enlarged in 1/3. |
| 5 | Blood. | Plasmodia. | Spirochætes. | – |
| 6 | Diazo reaction. | – | – | + |

* Middle generally yellowish and dry, edges cyanotic.

[1] MmW = Münchener medizinische Wochenschrift. MK = Medizinische Klinik. WkW = Wiener klinische Wochenschrift.

The ready cure of recurrens by organic arsenic is confirmed by two other observers. Professor Reiche, of Hamburg, finds (MmW40) a dose of salvarsan 0·3 grm. intravenously sufficient to effect a regular cure. Professor Korczynski, of Sarajevo, gives (MK39) the preference to neosalvarsan in a single dose of 0·9 grm., reduced to 0·45–0·6 in subjects of small build.

*Pharmacology.*—Dr. Marcovici and Dr. Pribram describe (WkW37) the remarkable *protection* to rabbits *against dysentery toxin* afforded by a daily dose of 2·5 grm. of *garlic*, which is sufficient to prevent death after 10 times the normal lethal dose has been administered. The drug is also active against a culture of B. dysenteriæ given intravenously. An animal of 1–1·5 kilo. can tolerate 2·5–5 grm. daily.

*Statistics.*—The number of names on the *medical register* in Germany for 1913 was given (MK40) as 34,136 males and 195 females, being 5·1 to every 10,000 inhabitants, or 9·6 in towns over 10,000 inhabitants and 3·8 in the country. Greater Berlin had 4151 names, being 11·1 per 10,000. According to the official reports to date, of these 473 were reported (MK39) wounded, 101 prisoners (18 of these have returned), 118 missing (43 returned), 214 died of wounds, 95 of disease, 1 of gas-poisoning.

*Surgery.*—Professor Sauerbruch, of Zürich, who has been attached to a base hospital at Greifswald, has worked out there in association with Herr Stodola, professor of mechanics at the University of Zürich, a method of producing an *artificial hand* which can be *voluntarily moved* (MK41). A proper bone-stump is essential and the existence of muscles and tendons which can give sufficient contraction. In the case of a high amputation through the middle of the arm flaps of skin and muscle are formed out of the flexors and extensors with the aid, if necessary, of a skin-graft from the abdominal wall. After healing is complete the edges of the flaps are refreshed and united so as to leave a transverse canal lined by skin to contain a thin wooden stirrup to which strings are attached to move the hand. In another case the flap was made out of the flexors alone, but the principle was the same. The method has the simplicity of genius, as much of Sauerbruch's surgical work, and may, when more developed, do much to minimise the disability of a lost arm.

Professor Kraske (rank of general) writes from Brussels recording his experiences in the *early operation of abdominal shots* (MmW39). Of the cases operated upon within the first 12 hours 7 out of 9 recovered; in the second, 11 out of 21; in the third, 2 out of 8; in the fourth, none. He considers that the conclusion to be drawn is obvious.

# THE NATIONAL INSURANCE ACT.

### *The New Regulations.*

THE new regulations making alterations in the terms of service for medical men, to take effect on Jan. 1st, 1916, have been introduced at an unfortunate time and in an unfortunate manner. The medical practitioners on the panel, and now remaining in civil practice, are naturally hampered in contesting points, which they feel that they have a right to contest, by the consideration that nothing avoidable ought to be initiated in the way of controversy until after the war. At the same time they had a right to expect that during the period of the war nothing likely to arouse controversy would be done by the Insurance Commissioners. This has hardly been the case.

The new tariff of prices for drugs and scheduled appliances supplied under the National Insurance Acts may affect mainly the druggists, but the explanatory notes issued with the tariff to elucidate the new system of pricing and paying for prescriptions must be studied by medical men in order fully to understand them, as must be Memo. 217/I.C., dealt with briefly in THE LANCET of Nov. 13th (p. 1102), for these relate to regulations affecting practitioners on the panels. The essential features of the regulations as to dispensing are: (1) a new tariff of prices, described as a commercial tariff, has been issued, by which the cost of drugs is to be regulated in the pricing and paying for prescriptions dispensed under the Act; and (2) the price which the druggist will receive will be calculated by the Insurance Committee which pays him. The sum paid for each prescription will be made

up of charges calculated per ingredient, and a dispensing fee in respect of the prescription as a whole. Drugs and appliances are to be of a grade or quality costing a price corresponding as nearly as may be to the price in the tariff referred to. In connexion with these provisions Article 40 in the existing regulations is revoked, so that other provisions may take the place of those which assigned to the Pharmaceutical Committee the function of making representations to the Panel Committee as to alleged extravagant prescribing. Sums recovered in respect of Article 40 will now be credited to the Practitioners Fund. It may be some time before the full effect of this change can be judged of, but it seems evident that there will be room for dissatisfaction on the part of the druggists as to the accuracy or fairness of the calculation of prices made on their behalf in individual cases, and also with the amount of profit which their insurance business will bring them under the new conditions. They will gain in having the amount due to them paid without discount, but whether the amount of their dispensing fees will suffice to reward them for dispensing will be the main point for their consideration. Apparently pricing bureaux will be set up by committees jointly or separately in order to deal with a new class of clerical work which at the present time may not be easy to provide for adequately.

It is claimed on behalf of the Insurance Commissioners that they discussed with representatives of the medical profession the desirability of amending the regulations relating to excessive ordering and to the adjustments between the Practitioners Fund and the Drug Fund. On behalf of the practitioners it is contended that the medical men engaged in service under the Act were not consulted as to the actual form which the amending regulations should take, and that they were not given an opportunity of consenting to or expressing their disapproval of the regulations as drafted. With regard to the other two alterations proposed to be made in the practitioners' conditions of service the Insurance Commissioners do not suggest that they have even discussed the question with representatives of the medical profession. The above statement of the position is taken from a report of the Finance and General Purposes Subcommittee of the Panel Committee for London, which also made some valuable recommendations as to points requiring consideration in connexion with the new drug tariff. The two alterations in the regulations referred to above as not having been discussed in any way with the medical profession are to be found (1) in an article giving power to a committee to require, after compliance with certain conditions, "that the practitioner shall not give any order for any drug or appliance in such a form as to necessitate a reference on the part of the person supplying the drug or appliance to a previous order"; and (2) in a regulation with regard to the medical certification rules that "all certificates shall be written in ink or in some indelible substance, and the practitioner's signature shall be written with his own hand." Any one of these individual questions, as, for example, whether a certificate may properly be signed with a rubber stamp, may well be thought of insufficient importance for the raising of serious controversy during the present national crisis, or, indeed, at any time. The more important point, although discussion even of that may have to be postponed until after the war, is the question of principle, and the medical profession will no doubt some day show itself tenacious with regard to the principle that it should be consulted as a profession upon questions which directly affect its members in the important and essential service rendered by them under the Insurance Acts. It will also presumably not remain satisfied as to the justice of retaining the existing drug tariff only where its retention is antagonistic to the interests of the medical profession. The London Panel Committee on Oct. 29th advised the members of the panel for London to allow their names to remain on the lists without making any communication to the Insurance Committee as to rejection or acceptance of the revised conditions of service. This Panel Committee has also since resolved to take the opinion of leading counsel, in addition to an opinion already obtained, upon points connected with the general question of the revision of the terms of service of panel practitioners.

*Herts Insurance Committee.*

At a recent meeting of the Herts Insurance Committee an interesting discussion took place with regard to the desirability of insured persons suffering from tuberculosis being allowed to do light work in their own interests and to further their cure. The attitude of the Approved Societies was in question. It was pointed out by the clerk that pending complete restoration to health light outdoor work or part-day employment would not only enable a patient to earn a little money, to be spent, if necessary, on extra nourishment, but had been found to improve the general health of the patient, and to brighten his outlook. It was suggested that the majority of the Friendly Societies allow their sick members to work under medical recommendation, and only object to such work being paid for. Dr. H. Hyslop Thomson said that it was the fact of no pay being allowed which constituted the difficulty, and strongly urged the desirability of the patient being allowed to do a half-day's work for a half-day's pay, but representatives of the societies said that the societies had trouble enough to look after their members already, and could not give their members sick pay and allow them to earn money at the same time. Attention will, no doubt, be kept directed to the attitude of the societies as defined by their representatives in the Herts Committee. It should not be impossible, at any rate when peace is restored, to arrange for the supervision of those drawing sick pay and yet able to do a little work, without casting an excessive burden upon the societies. These can hardly be so indifferent to the welfare of their members as not to be willing to coöperate, provided their funds are protected against undue exploitation, in the restoration of their members to health, and in affording them, as an incentive to recovery, proof that their power to earn wages by work has not deserted them.

*Northumberland Insurance Committee.*

At a recent meeting of the Northumberland Insurance Committee notice was received from a firm of druggists at Alnwick that they would cease to dispense under the Insurance Act from Jan. 1st, 1916. The increased cost of drugs and the absence of any promise of an increased allowance for dispensing were the causes assigned for this step. Three medical men at Bellingham gave notice that they were not prepared to remain on the panel for 1916. Dissatisfaction with the mileage fees allowed was stated by the clerk to the Committee to be the probable cause of this, it being added that the dissatisfaction was general, but that this was the first case in which resignation had given effect to it.

*Berkshire Insurance Committee and Soldiers and Sailors.*

At a recent meeting of the Berkshire Insurance Committee Sir Cameron Gull invited the attention of members of the Committee and the press to the fact that the Commissioners had approved the adoption by the county council of a recommendation made by the public health committee that residential treatment should be provided in the county sanatorium for tuberculous soldiers and sailors discharged from military and naval hospitals. There was plenty of accommodation for such cases in Berkshire, and only one or two were under treatment, but there must be a great many who would be found to need it, especially from the navy, if the opportunity offered could be made known.

*Devon Insurance Committee and Tuberculous Patients.*

At a meeting of the Devon Insurance Committee it was reported that by the opening of Hawkmoor Sanatorium for tuberculous patients in February next it is hoped to provide sufficient beds for all suitable cases in the county.

*Bristol Insurance Committee.*

At a meeting of the Bristol Insurance Committee it was reported that 27 medical men out of the total number of 123 on the panel were serving with His Majesty's Forces.

---

A JEWISH BENEFACTOR OF POOR CHILDREN.—By the death of Mr. Zachary Merton the poor children of London have lost a generous benefactor. About 30 years ago he founded a trade school at Holloway, on which he expended £11,000, for the purpose of dealing with underfed London children after leaving the elementary schools. For many years he contributed annually £750 to the evening play centres; he had been a most generous supporter of hospitals, and had recently contributed £40 a week to meet cases of poverty caused by the war. A great deal of his benevolent work was done anonymously.

# THE LANCET.

*LONDON: SATURDAY, DECEMBER 18, 1915.*


## The Notification of Measles and German Measles.

As has already been noted in our columns, the Local Government Board, in exercise of powers conferred upon them by the Public Health Act, 1875, the Public Health (London) Act, 1891, and the Public Health Act, 1896, have issued an Order, entitled "The Public Health (Measles and German Measles) Regulations, 1915," applying, throughout England and Wales, a system of notification of these two diseases, and enabling local authorities to undertake measures for the care of patients suffering from these maladies. This Order follows the Board's circular letter of March 31st last, in which they requested sanitary authorities to take into consideration the question of applying to their districts a system of notifying cases of measles, German measles, and whooping-cough, with a view to controlling the spread of these diseases, and especially to reducing the mortality arising from them. As a result of this circular the Board have received a large number of applications from local authorities for the issue of an Order empowering them to take the measures contemplated in the circular. It has also been represented to the Board by the Army Council that measles has caused a large amount of disablement among the troops in this country, and that accurate information of the presence of this disease among the civil population would be of the utmost benefit to the military authorities. The Board therefore decided to issue the Order, a copy of which, together with an explanatory circular and a Memorandum on Measles by the medical officer of the Board have now been sent to all local authorities in England and Wales. It is hoped that medical officers of health, as soon as the Order comes into operation, will keep local military authorities advised of cases of measles in their districts in the same way as they now do in regard to other notifiable infectious diseases. It should be noted that the scope of the Order is limited to measles and German measles, and does not deal with the notification of whooping-cough, as did the Board's circular of March 31st.

The Public Health (Measles and German Measles) Regulations, 1915, which come into force on Jan. 1st, 1916, provide for notification of cases of these two maladies to the medical officer of health by medical practitioners and by parents or guardians or any other person in charge of the patient. A medical practitioner is required to notify at once any case of these diseases of which he becomes aware by attendance upon the patient, unless: (*a*) he has reasonable grounds for supposing that the case has already been notified under these Regulations; or (*b*) the case is notifiable or has been notified by a medical practitioner under the Infectious Disease (Notification) Act, 1889, Section 55 of the Public Health (London) Act, 1891, or under the provisions of any local Act or Order made thereunder; or (*c*) a case of the disease which he is attending, whether measles or German meales, has to his knowledge occurred in the same household or institution, and been notified within the period of two months immediately preceding the date on which he first became aware of the disease in the case he is attending; or (*d*) the case is being treated in a hospital for infectious diseases. A fee of 2*s*. 6*d*. is payable by the local authority to every medical practitioner for each notification under these Regulations if the case occurs in his private practice, and of 1*s*. if the case occurs in his practice as medical officer of any public body or institution. Under Article V. of the Regulations every parent or guardian or other person, as soon as he or she becomes aware or has reasonable grounds for supposing that any person in his or her charge is suffering from measles or German measles, is required to notify the case to the medical officer of health unless this has already been done by a medical practitioner. The duties of local authorities and medical officers of health are set out in a circular of the Local Government Board with commendable particularity.

While it is possible that the powers provided by the Order for dealing with measles may limit, at least to some extent, the spread of the disease, we are inclined to believe that they will be found to be much more useful in reducing mortality from it; and if anyone has doubts as to the needs of administrative action with the latter end in view a glance at the Memorandum on Measles prepared by Dr. A. NEWSHOLME, the medical officer of the Local Government Board, should be sufficient to dispel them. Dr. NEWSHOLME states that:—

> On an average about 11,000 deaths from measles occur in a year in England and Wales. Besides these deaths avowedly from measles, however, there are numerous other deaths attributed to other causes, such as bronchitis and pneumonia, but due to a considerable extent to measles. Thus in the three years 1911–13, 33,457 deaths were caused at ages under 5 by measles, and at the same ages 83,650 by bronchitis and pneumonia, which in many instances are the terminal stage of an attack of measles (or of whooping-cough) which is not mentioned in the death certificate. It is noteworthy, also, that during the same three years all the notifiable diseases (small-pox, scarlet fever, diphtheria, enteric fever, puerperal fever, and erysipelas) were responsible for only 31,641 deaths at all ages, as compared with 36,627 from measles.
>
> The most common complications to which death is due during an attack of measles are bronchitis and pneumonia, diarrhœa and convulsions. Measles is especially fatal in rickety children. In some outbreaks, many children die from convulsions at the onset of the disease; in others, pneumonia of severe type may develop almost simultaneously with measles. ..... The mortality from measles is not, moreover, a complete index of the mischief wrought by it. To the complications mentioned in the previous paragraph as frequently fatal must be added many ailments such as chronic bronchitis, collapse of lung, dilatation of bronchi, pleurisy, empyema, pyæmia and noma, which cause prolonged disablement where they do not produce

death. Measles is a frequent cause of retarded growth and development and of ill-defined ill-health; it often lights up latent tuberculosis; and deafness and defects of eyesight are in many instances attributable to it.

Dr. NEWSHOLME lays stress on the well-known fact that measles as a cause of death is confined chiefly to children under 5 years of age, and states that if steps can be taken to postpone attack from this disease to the age of 5 years the State will secure an enormous gain of lives, as well as greatly improved vigour and usefulness in those who will have escaped injury by the complications which are so frequently connected with the malady.

The chief difficulty in controlling the spread of measles lies in the fact that the disease is infectious before the definite signs appear by which its nature can with certainty be recognised, and this, together with the circumstance that measles is still commonly regarded as a necessary and even as a relatively minor complaint, reduces the possibility of preventing its spread from the first case to other susceptible members of the household. By means of the information obtained as a result of notification, however, the medical officer of health can adopt measures to reduce the proportion of fatal cases and of disabling complications. If more general action cannot be taken, at least nursing assistance should be provided for the poorest families who most need supervision and active help, attention being concentrated on families in which children, aged 1 to 4 years, are either suffering from measles or have been exposed to its infection. During an epidemic of measles it will usually be advisable to divert temporarily from other work health visitors, sanitary inspectors, and any available nurses employed by the sanitary authority. With these, aided by temporary nurses paid or subsidised by the sanitary authority, great good can be accomplished. We hope that medical officers of health and sanitary authorities will do all in their power to carry out the suggestions contained in Dr. NEWSHOLME'S Memorandum, which we are sure will do much to save life and diminish the serious results from measles.

## Incompatibilities.

MANY are the pitfalls in the path of those commencing medical practice, and these are almost unsuspected by students who have few personal responsibilities during their hospital career. Those who prescribe under direction of seniors in the out-patient room too often are encouraged to make use of stock prescriptions, which save the time of the dispenser, while the teacher is apt to devote attention to interesting matters concerning physical signs, diagnosis, and prognosis rather than to an explanation of details connected with prescribing. Senior students and junior practitioners often have cause to regret this tendency of hospital training. When working without a guiding hand they may well be perplexed by the number of errors they may perpetrate, and there is some excuse if they acquire a habit of prescribing some compressed forms of drugs, by which means they evade troublesome questions of incompatibility and even of dosage. Of late years dosage has been so far simplified that few difficulties remain, but it can hardly be said that sufficient attention is devoted to the construction of the prescription. The curriculum is so crowded that it is almost impossible to expect anything more than a perfunctory attendance at a course of practical pharmacy, and without the direct object-lessons the chemical data which supply the explanation of most incompatibilities are apt to be overlooked.

In many senses every prescription that is written may be regarded as an experiment. In terms of logic it might be considered in the form of a syllogism, where the value of the conclusion depends upon the amount of care that has been taken in framing the major and the minor premisses. So far as the patient is concerned the success of the experiment turns on the diagnostic power of the prescriber and his knowledge of the action of the remedies employed. It must not be forgotten, however, that while this is true so far as it applies to success or failure in treatment the experiment really begins at a much earlier stage. The legibility, or otherwise, of the prescription may form part of the experiment, and may be looked upon, charitably, as a test of the experience of the dispensing chemist. It must be admitted that appalling calligraphy and undecipherable abbreviations are often brought to our notice as examples of prescribing, and these it is impossible to defend unless it is assumed that they are written as a private code of which the particular prescriber and dispenser alone possess the key. For the average pharmacist they undoubtedly transgress the ancient principle of *cito, tuto et jucunde*. He cannot carry on his work quickly, safely, and joyfully if he is continually hampered by the difficulty of guessing what the prescriber has intended him to do. But even when the hand-writing is clear, the doses correct, and the directions plain, the ideal prescription will not have been produced unless the writer has carefully considered what may result when the different ingredients are mixed. By long experience some older practitioners may dash off a prescription that is free from offence, but dispensers and others too often have reason to smile, we hope kindly, when acids are found side by side with alkalies or with carbonates, when compounds of iron are prescribed with vegetable tinctures or infusions rich in tannin, or when insoluble compounds would inevitably be produced if the directions were followed without further inquiry. Good-natured chaff has often been directed against the blunderbuss prescription, where the number of the ingredients inevitably suggests either a vague diagnosis or a sanguine expectation that one of the crowd, no matter which, will hit the mark. Perhaps the importance of each ingredient may be comparable

to that of the elusive constituent claimed to be present in some proprietary preparations, though able to defy detection by the ordinary methods of analysis. A blunderbuss is always a dangerous weapon—and it is especially so in the form of a prescription where the drugs have to fight it out amongst themselves before they join forces against the disease. In this fight it is possible that physiological antagonists may play a prominent part. This may involve no greater harm than a waste of energy. If, on the other hand, the fight is on the score of chemical incompatibility, we are warned in a recent publication[1] on this subject that all sorts of fearsome things may happen, from explosions with carbonates on the chemist's counter to shattered nerves when the sudden disengagement of gas occurs by the bedside. We may hope to have supplied a mixture of a pleasing red colour, and we find that an uninviting green results owing to an alkaline drug having been introduced. We may have thoughtlessly mingled clear solutions and unexpectedly formed a loathsome brown precipitate. Certain solids, which may easily be powdered when kept apart, occasionally become liquid or pasty when prescribed together.

The tyro in dispensing or prescribing may regard these details scornfully, and may think they savour of examination catches, or of errors which no properly qualified man is likely to make. Men of greater experience will probably be discreetly silent as they ponder over the subject, ruefully recalling the errors of their youth, and perhaps realising recent slips in prescribing some of the newer synthetic compounds. Hints for improvement are valuable to many a practitioner, and when they are kindly offered we may be sure that they are kindly accepted. The saddest incompatibility in medicine is that which sometimes dissociates two groups who should be working harmoniously—the practitioners and the dispensers.

## The Coördination of Recruiting for the Military Medical Services.

WE published last week a letter from the Central Medical War Committee to the Local Medical War Committees in which a plan was suggested for the canvass of medical men of military age, together with a scheme of classification indicating the order in which, generally speaking, the individual practitioners in any area might be urged by the local Committees to leave their practices for the purpose of undertaking military service. We publish this week another communication from the Central Medical War Committee to the Local Medical War Committees showing the further steps that have been taken by the central body to provide the army with a steady and sufficient supply of medical officers. For this object to be realised it is necessary that the work of those who go should be carried on in their absence, and this implies that the recruiting of medical men must be done with careful regard to the needs of every locality. Bearing this in mind, the Central Medical War Committee has been in conference with the various Government departments concerned, and particularly with the National Health Insurance Commissioners, who have contracted for the provision of medical treatment to the industrial population, and who necessarily view the withdrawal of medical men from civilian practice with jealousy tempered by patriotism. In this way a real system of coördination has been established by the Central Medical War Committee, which on the one hand has been recognised by the War Office as the body to organise the profession for military purposes, and on the other is working through the Local Medical War Committees with every opportunity of assistance from the Panel Committees. If the Local Medical War Committees, in adopting the scheme of classification which has been suggested to them, should take advantage of all sources of information which will lie under their hands, and in particular should keep in close touch with the Panel Committees of the different areas, the urgent needs of our army for medical officers should be met with the minimum risk to the civilian population.

[1] Incompatibility in Prescriptions and How to Avoid It, by Thos. Stephenson, Ph.C., F.C.S.

# Annotations.

"Ne quid nimis."

## PHTHISIS AND THE MANUFACTURE OF BOOTS.

THE report of the Special Investigation Committee upon the Incidence of Phthisis in the Boot and Shoe Industry[1] is an interesting and able study of etiological factors in producing tuberculosis. The conditions in the industry at the present time are very special ones, as during the last half century the hand-making of boots in the cottage home has given place to the manufacture in a factory where the processes are to be numbered by the hundred. The population concerned is a considerable one; the Census of 1911 gave 169,000 males and 44,000 females in the boot and kindred industries, the chief centres being Leicester and Northampton. The high prevalence of phthisis amongst this population is not disputed, although the present data are not beyond criticism and have still to be completed. Dr. John Tatham stated in a report dealing with the years 1900–02 that whilst the comparative mortality figure among shoemakers was within 2 per cent. of the average for occupied males, the mortality from phthisis was 35 per cent. in excess. This excess was further due to special causes, as influenza and respiratory disease in general were below the average. Taking the determining factors seriatim, the committee feel able to exclude from the list of contributing causes hereditary predisposition, poverty and consequent malnutrition, alcoholism, housing, and infection from materials used. Overcrowding was only apparent on account of the abundance of machinery

[1] National Health Insurance. Medical Research Committee. First Report of the Special Investigation Committee upon the Incidence of Phthisis in Relation to Occupations. The Boot and Shoe Industry. London: Wyman and Sons. 1915. Price 3d.

and movable frames. On the other hand, the fatigue caused by the constant exercise of care and attention in the execution of a number of finely adjusted and rapid muscular movements is a factor of importance. A cramped position of the chest, not so marked as when the laster sat at a bench and tucked the last into his chest, is still a factor with the clicker, who compresses his abdomen and lower ribs as he leans over his cutting board. More important is the sedentary indoor occupation, the figures indicating a direct relation between the prevalence of phthisis and the extent to which the occupation is sedentary. Due weight must be given to the opportunity for transmission of an infectious disease in rooms tenanted by large numbers of individuals, often over 100, for 54 hours every week. In regard to the three great factors of light, cleanliness, and ventilation, the committee find that dirty windows often give an impression of gloom, that dry sweeping of floors is an obvious source of danger, and that ventilation is generally inadequate. Windows are very commonly closed by the workers who complain if subjected to cool air currents. Having summarised their conclusions, the committee fortunately do not stop at what is properly within their scope, but make certain recommendations for administrative reform. They advise the opportunity for games or Swedish drill to counteract the deleterious effect of sedentary occupation by the institution of quarter-hour intervals at 11 A.M. and 4 P.M. Starting from the assumption that it is the physical rather than the chemical qualities of the atmosphere which influence the health and vigour of the worker, they attach great importance to artificial ventilation to give both impulsion at the 8-foot level and extraction at the roof, while in hot weather the extraction fan should be arranged to impel fresh air. Heating mechanism should be separate from the ventilating mechanism so that the air introduced is not heated. To deal with the actual cases of phthisis the committee make the novel suggestion of an industrial sanatorium where operatives can carry on their trade under medical supervision for such hours as they are able, and earn wages in proportion. As health is re-established working hours and earning capacity would be increased, until finally normal hours could be safely undertaken in many cases and factory employment resumed. The plan presents the great advantage of teaching the operative how to carry on his handicraft under hygienic conditions.

## CRIME AND LEGAL INSANITY.

IN a breezy article Sir Bryan Donkin expresses in our columns this week his disapproval of a leading article published in THE LANCET of August 14th, and prompted by the Report of the Subcommittee of the British Medical Association. This report is a valuable and carefully compiled document. But though concise in its treatment of all the aspects of its subject, it is long and should be read in its original text by those interested in criminal law and procedure in its relation to a branch of medicine. We did not undertake to summarise it or criticise it in detail. Sir Bryan Donkin is dissatisfied with our brief reference to the proposed alterations in the law as it is laid down by a judge to a jury, where the point at issue is the legal responsibility of a prisoner for acts which would be criminal in a sane person. The subcommittee expressed the opinion that the following might be accepted as a fair definition of responsibility for crime in preference to the ruling laid down by Sir James FitzJames Stephen:—

> No act is a crime if the person who does it is, at the time when it is done, prevented either by defective mental power or by any disease affecting his mind (*a*) from knowing and appreciating the nature and quality of his act or the circumstances in which it is done; or (*b*) from knowing and appreciating that the act is wrong; or (*c*) from controlling his own conduct unless the absence of the power of control has been produced by his own default. N.B.—Wrong means morally wrong or illegal.

This is the definition which Sir Bryan Donkin blames us for omitting to criticise or to quote. It is a broader and more satisfactory statement of the grounds upon which responsibility should rest than that which it is designed to replace, and, if adopted, will lead to interesting practice. We do not feel able to say anything more definite. Looking back at certain past trials in which prisoners have been found guilty, we ask ourselves, Would they have been acquitted as irresponsible if their appreciation of their acts and the circumstances thereof had been considered at their trials? We doubt it.

## A SHRAPNEL BULLET IN THE BLADDER.

A CASE of a very rare condition—the lodging of a bullet in the cavity of the bladder—is reported by Dr. D. P. Penhallow, from the American Women's War Hospital, Paignton, Devonshire, in the *Boston Medical and Surgical Journal* of Oct. 28th. A sapper, aged 20 years, was wounded at Ypres on May 26th, 1915, by a shrapnel bullet from a shell which burst about 50 yards from where he was standing. He walked a distance of 600 yards to the dressing station, where the wound was dressed, and then 200 yards farther to the ambulance. He was taken to a general hospital, where he was kept for four days and then sent to Paignton. At the lower end of the sacrum in the median line was a penetrating wound half an inch in diameter, surrounded by a reddened area. There was a little seropurulent discharge from the wound, but no sinus could be made out. He felt quite well, but had difficulty in micturating, especially when standing. The stream would start normally and be suddenly checked, with considerable pain. When lying on his side there was no difficulty in micturating. When lying down, if he turned over he felt something moving about in the bladder. For the first two days after he was wounded the urine was slightly red, and the first motion passed was slightly streaked with blood. Rectal examination showed the tract of a sinus adherent to the rectum passing round to the left and then straight towards the bladder. But no opening in the rectum, tenderness, or masses could be made out. The urine was normal except for a little blood and pus. The cystoscope revealed a rounded mass to one side of the urethra, which moved when the patient turned. A sound was passed and showed the presence of a metallic body. This body was also apparent in the bladder region on X ray examination in different planes. Under ether suprapubic cystotomy was performed and the bullet removed with forceps. The wound in the bladder was closed and a small drain was inserted into the prevesical space. The body removed was a leaden bullet half an inch in diameter encrusted in places with salts. Uneventful recovery followed. It is interesting to compare this case with another recorded by the French genito-urinary surgeon,

M. George Luys, which we have previously described.[1] The bullet wound was in the right buttock and the soldier was able to walk to the ambulance station, supported by two comrades, a distance of 4 kilometres. The symptoms were very similar, but micturition in the standing position was impossible. With the aid of his direct vision cystoscope M. Luys seized the body with forceps and removed it by the urethra, an operation which had never previously been performed. It proved to be a deformed German bullet with calcareous deposit in its grooves. More recently another French surgeon, M. Legueu, has used a specially modified lithotrite for the seizing and removal of the bullet by the urethra.[2]

## INFANTILE MORTALITY IN THE PHILIPPINES.

SINCE the American occupation of the Philippine Islands the medical officers sent there by the United States Government have greatly distinguished themselves by their efforts to save human life and prevent the unnecessary suffering arising from preventable diseases. The recently published annual report for 1914, of Dr. Victor G. Heiser, Director of Public Health in the Philippines, takes stock of the progress which has already been made, and points out the direction in which much remains still to be done. He places infantile mortality in the forefront of the evils to be dealt with and paints a lurid picture of the waste of infant life. It is stated that the lives of 135,000 out of 210,000 potential citizens are sacrificed before they have attained the age of 5 years, and that less than a third of the children conceived live to reach the age of 1 year. In the report of a committee of investigation this is characterised as "a serious menace to progress, a disgrace to our civilisation, a criticism of our Government, a shame to our Christianity, and a sociologic crime." The plea of lack of funds has been advanced, but the committee reply that "an additional 1 centavo stamp placed upon every letter posted in the Philippines" would furnish enough money to save annually the lives of 25,000 babies; and it is added that more infants die out of every hundred births in the Philippines than die in Australia out of every thousand born. If, then, the Australian methods were adopted, this alone, it is maintained, would cause a decrease of 25 per cent. in the infantile mortality in the Philippines within two years; or, if as much were spent locally for health purposes as for the prosecution of crime and the protection of society against criminals, the lives of 10,000 babies could be saved annually. Poverty seems to be an important factor in the present high death-rate among infants. In Manila many babies die as a consequence of the poor quality of their mother's milk. It is stated that 75,000 infants are being fed at the breasts of under-nourished and sick mothers; while another 50,000 young children are swallowing "dangerous and poisonous mixtures" given to them under the name of food. In THE LANCET of June 6th, 1914, we drew attention to the great mortality from infantile beri-beri in Manila associated with the inability of mothers of the poorer classes to give sufficient nourishment to their babies from the breast. Dr. Heiser, in his recent report, states that no fewer than 899 children under one year of age died in 1914 at Manila from beri-beri, and that the large majority of them were at the time of death breast-fed solely. Another cause which helps to swell the number of feeble infants arises from the fact that about 2000 mentally deficient persons who ought to be in asylums are permitted to live with their relatives, their keep constituting a heavy charge upon their poverty-stricken friends. These people of weak intellect nevertheless continue without any restrictions to propagate their kind, and add annually to the population a number of feeble infants ill-fitted to survive the struggle for existence. Another important factor in infantile mortality is the increasing prevalence of venereal diseases. In Manila nearly 400 prostitutes, most of whom are infected with syphilis or gonorrhœa, ply their trade under an unofficial system of supervision. In addition, more than 75 per cent. of the hundreds of "dance-hall girls" around Manila are also infected with venereal diseases, and these maladies are now, it seems, spreading rapidly through all classes of the people. We feel sure that if Dr. Heiser and his colleagues were given the required legal powers and furnished with sufficient funds by the Philippine Government, the high infantile mortality-rate would soon show a marked reduction, just as the adult mortality from many diseases has already been lowered by the well-directed efforts of these officers.

## THE TREATMENT OF CEREBRO-SPINAL SYPHILIS BY MERCURIALISED SERUM.

IT is both just and inevitable that the final determination of the varieties of syphilis of the nervous system, as due to the direct action of the spirochæte and its generated toxins, should be followed by resolute attempts to counteract the effects of spirochætal activity, or, better still, to kill the organism itself within the cerebro-spinal axis. Already several modifications of the original procedure advocated by Swift and Ellis have been recorded. Ravaut's method consists in the direct injection of small quantities of neosalvarsan into the spinal theca by lumbar puncture, but not a few untoward results have been noted. Ogilvie's plan is to mix the patient's serum with a given quantity of salvarsan *in vitro*, and inject the material thus prepared into the theca. Intracranial in preference to intraspinous puncture has been adopted by Levaditi, Marie and Martel, and also by Wardner, apparently with some success. Still more recently Dr. Charles M. Byrne, of Baltimore, has been essaying treatment by means of mercurialised serum. There is little doubt theoretically that the direct introduction of a known antisyphilitic agent into the cerebro-spinal system is the ideal procedure. In order to determine the best form in which to administer mercury intraspinally, Dr. Byrne began by choosing 15 syphilitic cases, divided into three groups of five: 5 were treated by inunction, 5 by intramuscular biniodide injections, and 5 with bichloride by the mouth. It was then found by chemical analysis that the patients treated by inunction showed a larger percentage of mercury in the blood serum than the others. In one case only was a minute quantity of mercury recovered from the cerebro-spinal fluid. Obtaining in this way a mild autogenous mercurialised serum, Dr. Byrne discovered that 18 c.c. of human serum would hold in solution the equivalent of 1 grm. of mercury bichloride in the form of an albuminate. He began by using extremely small doses of this prepared albuminate, which were gradually increased to $\frac{1}{10}$ grm. without harm and later to $\frac{1}{5}$ grm. His full method, as recently described, is as follows: Some

[1] THE LANCET, March 6th, 1915, p. 504.
[2] THE LANCET, Nov. 27th, p. 1209.

6 oz. of the patient's blood are removed by venesection; from it the serum is collected, centrifuged, inactivated at 56° C. for half an hour, and to it is added $\frac{1}{10}$ or $\frac{1}{15}$ grm. of mercury in the form of the albuminate. The serum is then ready for intraspinous injection. The latest modification of this method, reported at a recent meeting of the New York Neurological Society, is to use horse serum duly mercurialised and diluted with saline, according to the original Swift-Ellis method, before injection. Dr. Byrne has had 15 cases under treatment with mercurialised serum; 8 were cases of tabes dorsalis, 3 cerebro-spinal syphilis, 3 general paralysis, and 1 tabo-paresis. All showed improvement and several, he said, "were to be regarded as clinically well except for permanent organic changes." In all except one there has been an early and pronounced reduction in the cell count and globulin content of the cerebro-spinal fluid. In 3 cases the Wassermann reaction in the fluid weakened; in 4 it changed from positive to negative; and in 1 it changed from positive to doubtful. The remaining cases were still under treatment at the time of writing. Improvement set in on an average after three intraspinous injections at intervals of a week or ten days. Another record of encouraging results has been published by Dr. Henry A. Cotton in the July number of the *American Journal of Insanity*. He draws an important comparison between cases of general paralysis which show spontaneous remissions—i.e., without specific treatment—and the results in thoroughly treated cases. The percentage of remissions is very much higher in the latter group. Dr. Cotton has been using the Swift-Ellis method, Ogilvie's modification, and Byrne's mercurialised serum. He gives the following statistics in regard to 31 cases of tabes and general paralysis treated for at least six months. Eleven were arrested, or 35·5 per cent.; 7 (22·5 per cent.) were much improved; 7 did not improve; while 6 (19·5 per cent.) died. The greatest number of treatments given in one case was 33 and the least number 8.

## CHICKEN CHOLERA.

Dr. J. P. McGowan, assistant superintendent of the laboratory of the Royal College of Physicians of Edinburgh, has published through Messrs. Blackwood and Sons a pamphlet on the Epidemiology and Pathology of Chicken Cholera, together with a Discussion on White Diarrhœa in Chicks. Dr. McGowan describes the research carried out by himself on behalf of the Edinburgh and East of Scotland College of Agriculture into chicken cholera and the white diarrhœa of chicks. At certain premises where the intensive system of poultry-rearing was used and eggs were hatched in incubators, some chicks died from white diarrhœa in April. In December an epidemic broke out among the hens characterised by discharge from the nose of a glairy mucus, exudate and ulcers in the mouth. In January these symptoms ceased and were followed by a form of paralysis affecting the legs chiefly, and in many cases this improved in course of time and the birds recovered almost entirely. Examination of the spinal cords of the affected fowls by Dr. J. Dawson, neurological histologist, revealed nothing abnormal. The organism which Dr. McGowan obtained from the lungs and heart in a case of white diarrhœa was identical with the chicken cholera organism, and the occurrence of paralysis and catarrh of the upper air passages is symptomatic of the tendency of action of the members of the hæmorrhagic septicæmia group—i.e., to fix on certain localities of the body in certain epidemics. The chicken cholera organism is a saprophyte in soil, manures, and water; it is also present in the air passages and intestines of a large number of apparently healthy fowls. Although it may be present and harmless for long periods, yet a lowered vitality of the bird may cause it at any time to assume a high degree of virulence. The investigator concludes that one outstanding feature of the whole of the hæmorrhagic septicæmia organisms (in fowl, sheep, and cattle) is that while they may produce both sporadic and infectious diseases in the adult, they may also cause infectious conditions usually associated with diarrhœa in very young animals. The white diarrhœa of chicks is consequently considered to be caused by the chicken cholera organism, which, like other members of the hæmorrhagic septicæmia group, can occasion sporadic cases of the malady at one time and devastating epidemics at another.

## THE METROPOLITAN WATER-SUPPLY.

THE report on the condition of the Metropolitan water-supply during the month of August shows that while the period under review was dull and showery the rainfall was 2·27 inches, or 0·12 inch below the average. The maximum fall of 0·54 inch occurred on the 2nd. Altogether rain fell on 15 days. The chemical and bacteriological results of the examination of the raw waters show on the whole a correspondence. The raw river waters deteriorated as judged by the albuminoid nitrogen (Thames excepted), permanganate, turbidity (Thames excepted), and colour tests. Bacteriologically, the raw Thames and New River waters contained fewer and the raw Lee water more bacteria than their respective averages. The filtered waters deteriorated as judged by the albuminoid nitrogen (West Middlesex, Grand Junction excepted), permanganate (West Middlesex, Grand Junction excepted again), and colour tests (East London, Kempton Park, West Middlesex, Grand Junction excepted). Bacteriologically, the filtered waters were satisfactory.

THE Acting Registrar of the General Medical Council gives notice that on and after Dec. 18th the business of the Council will be transacted at 44, Hallam-street, Portland-place, London, W., to which all communications should be sent, instead of at 299, Oxford-street, W., as hitherto.

WE have just received the Medical Directory for 1916, and note in passing a diminution of two in the numerical summary of the medical profession, and the reinstatement of the "Abroad" section. The volume will receive more extended notice in a later issue.

WE regret to announce the death in London on Dec. 10th of Dr. George Allan Heron, consulting physician to the City of London Hospital for Diseases of the Chest and to the National Sanatorium at Benenden, whose name has been associated for more than 30 years with the treatment of tuberculosis.

THE library and offices of the Royal Society of Medicine will be closed from Friday, Dec. 24th, to Tuesday, Dec. 28th, both days inclusive.

# Public Health.

## ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

*Administrative County of Essex (Report for 1914).*—Commenting upon the effects produced by the war upon the public health administration of the county, Dr. J. C. Thresh states that two of the county tuberculosis officers, Dr. Roberts and Dr. Williamson, who belonged to the Royal Army Medical Corps, were immediately called up on the declaration of war, while Dr. Bruce, another county official, joined the army at a later date. The following medical officers of health had also to join their regiments: Dr. A. Butler Harris, Loughton; Dr. J. F. Taylor, Leyton; and Dr. J. D. Wells, Billericay Rural District. Dr. H. R. Brown, Maldon, at once joined a base hospital in France, and since then Dr. W. F. Corfield, Colchester, and Dr. E. P. Dickin, Brightlingsea, have also undertaken military duty. Shortly after the declaration of war soldiers poured into the county and in the first instance had to be billeted in the towns and villages. Arrangements were accordingly made for the systematic inspection of billets, the supervision and improvement of sources of water-supply, and the efficient scavenging of towns and villages by the engagement of extra scavengers, while provision for the isolation of military cases of infectious disease was made by the addition of pavilions to the isolation hospitals at Colchester, Chelmsford, Harwich, and Orsett. By close coöperation between the military medical officers, the district medical officers of health, and the county medical officer of health all difficulties were overcome, and the fact that the health of the troops and of the civil population continued excellent is proof of the efficiency of the sanitary administration. When camps came to be formed and tents and huts were run up to accommodate thousands of men other problems arose in connexion with camp sanitation. The best sites were not in all cases selected, having regard to water-supplies and the proximity of sewers, but all these difficulties have been dealt with in a more or less satisfactory manner. Naturally much additional work devolved upon the sanitary officials in the county, but this was undertaken enthusiastically and with successful results.

In reviewing the statistics of the county Dr. Thresh states that Essex has the enviable position of being the healthiest county, with possibly one exception, in the kingdom. The population at the middle of the year 1914 was estimated at 1,043,446. The birth-rate was 21·2 per 1000, the death-rate 11·0 per 1000, and the infant mortality rate 76 per 1000 births. It is interesting to note that, in spite of the immense amount of work which has been done in recent years with the view of minimising the prevalence of pulmonary tuberculosis, the death-rate from this disease in Essex, as in certain other places, has not continued to fall. By way of explanation Dr. Thresh, who apparently regards the failure of the continuance of the fall in the phthisis death-rate as apparent rather than real, offers the following suggestions. There can be no doubt that prior to the time when expert advice was rendered generally available deaths due to tuberculous diseases of the lungs were attributed merely to disease of the lungs, such as bronchitis, pleurisy, and pneumonia, without the fact being known that these diseases were caused by the presence of the tubercle bacillus. Hence many deaths are probably now correctly attributed to tuberculosis which previously would not have been regarded as of tuberculous origin. Dr. Thresh inclines to the view, however, that the real cause is due to the fact that in 1911 the Registrar-General initiated a system for correcting local death returns, and in that year there appeared to be a sudden increase in the number of deaths from pulmonary tuberculosis. Before that year deaths which occurred in institutions and deaths of persons who died outside the areas in which they were domiciled, when living, nearly all escaped registration by the medical officers of those areas. Now all these deaths are transferred to the districts to which they really belong. One effect of this is that persons dying in asylums are returned in the district in which they previously resided, and in asylums alone an average of 47 deaths has occurred each year from pulmonary tuberculosis. Before 1911 these deaths were not included in the totals for the county as their numbers were unknown, but since that date they have been included, hence the apparent failure of the death-rate to respond to the work done in combating tuberculosis. It is probable also that deaths from this disease occurred in other institutions and were not included in the county returns before 1911, but the real extent of the influence of this change requires further investigation. We hope that Dr. Thresh is right in his contention that the decline in the death-rate from tuberculosis is continuing, and shall be interested to learn the results of his further investigation of the question.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

In the 96 largest English and Welsh towns with populations exceeding 50,000 persons at the last Census, 7577 births and 5954 deaths were registered during the week ended Saturday, Dec. 11th. The annual rate of mortality in these towns, which had steadily increased from 13·3 to 18·5 per 1000 in the seven preceding weeks, fell in the week under notice to 17·1 per 1000 of their aggregate population, estimated at 18,136,180 persons at the middle of last year. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 15·4, against a corresponding rate of 16·1 per 1000 in London. The annual death-rate last week ranged from 7·4 in Ilford, 7·7 in Enfield, 8·1 in Acton, 9·8 in Aberdare, and 10·2 in Willesden, to 22·8 in Huddersfield, 23·7 in Barrow-in-Furness, 23·9 in Middlesbrough, 24·2 in Preston, and 25·8 in Wakefield.

The 5954 deaths from all causes were 476 fewer than the number in the previous week, and included 338 which were referred to the principal epidemic diseases, against 373 and 348 in the two preceding weeks. Of these 338 deaths, 103 resulted from infantile diarrhœal diseases, 81 from measles, 74 from diphtheria, 47 from whooping-cough, 22 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·0 per 1000, and coincided with that recorded in the previous week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 120, 125, and 98 in the three preceding weeks, rose to 103, and included 32 in London, 9 in Birmingham, 8 in Liverpool, and 4 each in Bolton and Sheffield. The deaths attributed to measles, which had been 65, 70, and 93 in the three preceding weeks, fell to 81; the highest recorded death-rates from this disease were 1·7 in Stockport, 1·9 in Cardiff, 2·0 in Dudley, 2·1 in Gloucester, 2·2 in Leicester, and 2·8 in Burnley. The fatal cases of diphtheria, which had been 67, 72, and 62 in the three preceding weeks, rose to 74, of which 25 occurred in London, 5 in Manchester, 4 each in Stoke-on Trent, Liverpool, and St. Helens, and 3 each in Coventry and Middlesbrough. The deaths referred to whooping-cough, which had been 49, 57, and 63 in the three preceding weeks, fell to 47, and included 9 in London, 4 each in West Ham and Birmingham, and 3 in Preston. The deaths referred to scarlet fever, which had been 31, 34, and 20 in the three preceding weeks, slightly rose to 22, of which 5 were registered in Manchester, 3 each in London and Stoke-on-Trent, and 2 each in Birmingham and Bootle. The fatal cases of enteric fever, which had been 13, 15, and 12 in the three preceding weeks, were 11 last week, and included 2 in Plymouth.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had declined from 3110 to 2811 in the six preceding weeks, further fell to 2738 on Saturday last; 282 new cases were admitted during the week, against 336, 318 and 278 in the three preceding weeks. These hospitals also contained on Saturday last 1549 cases of diphtheria, 54 of enteric fever, 37 of measles, and 10 of whooping-cough, but not one of small-pox. The 1549 deaths from all causes in London were 149 fewer than the number in the previous week, and corresponded to an annual death-rate of 17·9 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 169 to 516 in the eight preceding weeks, fell to 438 in the week under notice, but were 122 in excess of the number registered in the corresponding week of last year.

Of the 5954 deaths from all causes in the 96 towns, 240 resulted from different forms of violence and 467 were the subject of coroners' inquests, while 1698 occurred in public institutions. The causes of 67, or 1·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Leicester, Salford, and in 60 other smaller towns. Of the 67 uncertified causes, 12 were registered in Liverpool, 9 in Birmingham, 4 in London, and 3 each in St. Helens, Warrington, and Gateshead.

### HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 995 births and 841 deaths were registered during the week ended Saturday, Dec. 11th. The annual rate of mortality in these towns, which had been 17·6, 22·7 and 22·4 per 1000 in the three preceding weeks, fell to 18·7 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 17·9, against 15·4 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 10·3 in Perth, 12·4 in Ayr, and 12·7 in Kilmarnock, to 20·7 in Leith, 23·6 in Coatbridge, and 27·4 in Greenock.

The 841 deaths from all causes were 165 fewer than the number in the previous week, and included 77 which were referred to the principal epidemic diseases, against numbers rising from 61 to 87 in the three preceding weeks. Of these 77 deaths, 24 resulted from measles, 20 from scarlet fever, 19 from diphtheria, 12 from infantile diarrhœal diseases, and 1 each from enteric fever and whooping-cough, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·7, against 1·0 per 1000 in the large English towns. The deaths attributed to measles, which had been 16, 29, and 31 in the three preceding weeks, fell to 24, and included 8 in Glasgow, 6 in Hamilton, 5 in Greenock, and 3 in Edinburgh. The deaths referred to scarlet fever, which had been 16, 15, and 11 in the three preceding weeks, rose to 20, of which 13 were registered in Glasgow, 3 in Edinburgh, and 2 in Aberdeen. The fatal cases of diphtheria, which had increased from 9 to 21 in the five preceding weeks, fell to 19, and included 7 each in Glasgow and Edinburgh and 3 in Paisley. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 12, 15, and 17 in the three preceding weeks, fell to 12, of which 6 occurred in Glasgow and 3 in Aberdeen. The fatal case of enteric fever was registered in Dundee and that of whooping-cough in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 177, 322, and 291 in the three preceding weeks, fell to 211 in the week under notice, but were 57 above the number registered in the corresponding week of last year. The deaths from different forms of violence numbered 17, against 20 and 34 in the two preceding weeks.

### HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 494 births and 464 deaths were registered during the week ended Saturday, Dec. 11th. The annual rate of mortality in these towns, which had been 20·6, 20·1, and 21·8 per 1000 in the three preceding weeks, fell to 20·0 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 17·9, against corresponding rates of 15·4 and 17·9 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 22·6 in Dublin (against 17·9 in London and 19·4 in Glasgow), 21·0 in Belfast, 22·4 in Cork, 17·7 in Londonderry, 12·2 in Limerick, and 7·6 in Waterford, while in the 21 smaller towns the mean death-rate was 15·7 per 1000.

The 464 deaths from all causes were 43 fewer than the number in the previous week, and included 37 which were referred to the principal epidemic diseases, against numbers increasing from 31 to 50 in the three preceding weeks. Of these 37 deaths, 14 resulted from measles, 9 from infantile diarrhœal diseases, 5 from whooping-cough, 4 from scarlet fever, 3 from enteric fever, and 2 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·6, against corresponding rates of 1·0 and 1·7 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had increased from 2 to 15 in the five preceding weeks, were 14 last week, and comprised 13 in Dublin and 1 in Belfast. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 9, 17, and 12 in the three preceding weeks, fell to 9, and included 4 each in Dublin and Belfast. The fatal cases of whooping-cough, which had increased from 2 to 11 in the five preceding weeks, fell to 5, of which 3 occurred in Belfast and 2 in Dublin. The deaths attributed to scarlet fever, which had been 3, 10, and 7 in the three preceding weeks, fell to 4, of which 3 were registered in Belfast. The deaths from enteric fever were recorded in Dublin, Cork, and Limerick, and those from diphtheria in Dublin and Belfast.

The deaths referred to diseases of the respiratory system, which had steadily increased from 53 to 144 in the six preceding weeks, fell to 122 in the week under notice. Of the 464 deaths from all causes, 153, or 33 per cent., occurred in public institutions, and 7 resulted from violence. The causes of 17, or 3·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 1·1 per cent.

### VITAL STATISTICS OF LONDON DURING NOVEMBER, 1915.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 7·8 per 1000 of the population, estimated at 4,516,612 persons; in the three preceding months the rates were 5·9, 8·1, and 9·6 per 1000 respectively. The lowest rates last month were recorded in Kensington, St. Marylebone, Hampstead, the City of London, Lambeth, and Lewisham; and the highest rates in St. Pancras, Finsbury, Bethnal Green, Stepney, Wandsworth, and Greenwich. The prevalence of scarlet fever showed a considerable decline from that recorded in the previous month; among the several metropolitan boroughs this disease was proportionally most prevalent in St. Pancras, Finsbury, Shoreditch, Bethnal Green, Stepney, Deptford, and Greenwich. The Metropolitan Asylums Hospitals contained 2896 scarlet fever patients at the end of last month, against 2334, 2732, and 3072 at the end of the three preceding months; the weekly admissions averaged 329, against 273, 381, and 434 in the three preceding months. Diphtheria also was less prevalent than it had been during October; this disease was proportionally most prevalent last month in the City of Westminster, Bethnal Green, Stepney, Wandsworth, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1133, 1418, and 1620 at the end of the three preceding months, had declined again to 1551 at the end of last month; the weekly admissions averaged 195, against 143, 213, and 241 in the three preceding months. The prevalence of enteric fever showed a slight decline from that recorded in other recent months; of the 44 cases notified during November, 6 belonged to Wandsworth and 3 each to Paddington, Kensington, Hammersmith, Chelsea, St. Marylebone, Hampstead, Hackney, Shoreditch, and Stepney. There were 57 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of the month, against 63, 47, and 49 at the end of the three preceding months; the weekly admissions averaged 7, against 9, 7, and 9 in the three preceding months. Erysipelas was proportionally most prevalent in Bethnal Green, Stepney, Southwark, Battersea, and Deptford. The 24 cases of puerperal fever notified during the month included 6 in Lambeth, 3 in Fulham, and 2 each in St. Pancras, Islington, Hackney, and Deptford. The 23 cases of cerebro-spinal meningitis included 3 each in the City of Westminster and St. Marylebone, and 2 each in Kensington, St. Pancras, and Poplar; of the 5 cases of poliomyelitis, 2 belonged to St. Pancras.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitutions of the populations of the several boroughs. During the four weeks ending Nov. 27th the deaths of 5625 London residents were registered, equal to an annual rate of 16·2 per 1000; in the three preceding months the rates were 11·6, 14·0, and 14·6 per 1000. The death-rates last month ranged from 11·0 in Hampstead, 12·0 in St. Marylebone, 12·4 in Greenwich, 12·5 in Wandsworth, 13·0 in Stoke Newington, and 13·2 in Lewisham, to 18·4 in Bethnal Green, 18·9 in Stepney, 20·7 in Shoreditch, 21·3 in Southwark, 21·7 in Bermondsey, and 22·1 in Finsbury. The 5625 deaths from all causes included 342 which were referred to the principal infectious diseases; of these, 18 resulted from measles, 37 from scarlet fever, 74 from diphtheria, 45 from whooping-cough, 10 from enteric fever, and 158 from diarrhœa and enteritis among children under 2 years of age. The 18 deaths from measles showed a decline of 136 from the corrected average number in the corresponding period of the five preceding years, and included 4 each in Finsbury and Stepney, and 2 in Lambeth. The 37 fatal cases of scarlet fever were 15 in excess of the corrected average number, and included 8 in St. Pancras, 6 in Islington, and 2 each in Paddington, the City of Westminster, Shoreditch, Stepney, Bermondsey, Lambeth, and Wandsworth. The 74 deaths from diphtheria were 19 above the corrected average number; this disease was proportionally most fatal in Shoreditch, Bethnal Green, Southwark, Greenwich, and Lewisham. The 45 fatal cases of whooping-cough were 11 in excess of the corrected average; the highest

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING NOVEMBER, 1915.

*(Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1914. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living.† |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cerebro-spinal meningitis. | Poliomyelitis. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Enteric fever. | Diarrhœa and enteritis (under 2 years). | Total. | Annual rate per 1000 persons living. | | | |
| **LONDON** | **4,516,612** | — | **1397** | **855** | — | **44** | **1** | **24** | **370** | **23** | **5** | **2719** | **7·8** | — | **18** | **37** | **74** | **45** | **10** | **158** | **342** | **1·0** | **5625** | **16·2** |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington | 142,065 | — | 31 | 26 | — | 3 | 1 | — | 8 | 1 | — | 70 | 6·4 | — | — | 2 | 3 | 2 | 1 | 3 | 11 | 1·0 | 185 | 16·9 |
| Kensington | 170,817 | — | 24 | 16 | — | 3 | — | 1 | 9 | 2 | — | 55 | 4·2 | — | 1 | 1 | 1 | — | — | 2 | 5 | 0·4 | 179 | 13·6 |
| Hammersmith | 124,750 | — | 22 | 14 | — | 3 | — | **1** | 13 | — | — | 53 | 5·5 | — | — | 1 | 1 | — | 1 | 4 | 7 | 0·7 | 137 | 14·1 |
| Fulham | 158,849 | — | 48 | 28 | — | — | — | 3 | 9 | 1 | — | 89 | 7·3 | — | 1 | — | 3 | 1 | — | 6 | 11 | 0·9 | 179 | 15·2 |
| Chelsea | 63,791 | — | 13 | 10 | — | 3 | — | 1 | 5 | — | — | 32 | 6·5 | — | **1** | — | 1 | 3 | — | 1 | 6 | 1·2 | 86 | 16·7 |
| City of Westminster | 152,346 | — | 39 | 44 | — | — | — | — | 13 | 3 | — | 99 | 8·5 | — | — | 2 | 1 | — | 1 | 5 | 9 | 0·8 | 194 | 17·5 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone | 112,892 | — | 13 | 9 | — | 3 | — | — | 7 | 3 | — | 35 | 4·0 | — | **1** | — | — | — | — | 6 | 7 | 0·8 | 102 | 12·0 |
| Hampstead | 86,731 | — | 15 | 11 | — | 3 | — | — | 5 | — | — | 34 | 5·1 | — | 1 | — | 1 | — | — | 2 | 4 | 0·6 | 69 | 11·0 |
| St. Pancras | 212,497 | — | 121 | 31 | — | — | — | 2 | 19 | 2 | 2 | 177 | 10·9 | — | — | 8 | 2 | 1 | 1 | 6 | 18 | 1·1 | 285 | 17·4 |
| Islington | 324,764 | — | 131 | 63 | — | 2 | — | 2 | 21 | 1 | 1 | 221 | 8·9 | — | 1 | 6 | 8 | 5 | — | 7 | 27 | 1·1 | 425 | 16·7 |
| Stoke Newington | 50,454 | — | 18 | 8 | — | — | — | — | 4 | — | — | 30 | 7·8 | — | — | — | — | — | — | — | — | — | 53 | 13·0 |
| Hackney | 223,724 | — | 59 | 37 | — | 3 | — | 2 | 17 | — | — | 118 | 6·9 | — | — | 1 | 3 | 1 | — | 3 | 8 | 0·5 | 257 | 15·1 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn | 45,861 | — | 10 | 7 | — | — | — | — | 2 | 1 | — | 20 | 5·7 | — | — | — | 1 | 1 | 1 | — | 3 | 0·9 | 60 | 17·2 |
| Finsbury | 83,212 | — | 42 | 15 | — | 1 | — | — | 2 | — | — | 60 | 9·4 | — | 4 | — | 1 | — | — | 5 | 10 | 1·6 | 143 | 22·1 |
| City of London | 17,129 | — | 2 | 3 | — | 1 | — | — | — | — | — | 6 | 4·6 | — | — | — | 1 | — | — | — | 1 | 0·8 | 23 | 18·2 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch | 108,869 | — | 48 | 22 | — | 3 | — | — | 5 | — | — | 78 | 9·3 | — | — | 2 | **3** | 2 | — | 12 | 19 | 2·3 | 167 | 20·7 |
| Bethnal Green | 127,662 | — | 70 | 60 | — | — | — | — | 26 | 1 | — | 157 | 16·0 | — | — | 1 | 4 | 2 | — | 17 | 24 | 2·5 | 173 | 18·4 |
| Stepney | 273,265 | — | 134 | 81 | — | 3 | — | — | 30 | **1** | — | 249 | 11·9 | — | 4 | 2 | 7 | 7 | 1 | 11 | 32 | 1·5 | 379 | 18·9 |
| Poplar | 160,222 | — | 23 | 21 | — | — | — | — | 17 | 2 | 1 | 64 | 5·2 | — | — | 1 | 2 | 1 | — | 7 | 11 | 0·9 | 214 | 17·2 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark | 186,941 | — | 26 | 34 | — | 1 | — | — | 25 | — | — | 86 | 6·0 | — | — | 1 | 5 | 4 | — | 13 | 23 | 1·6 | 304 | 21·3 |
| Bermondsey | 124,213 | — | 27 | 29 | — | 1 | — | 1 | 11 | — | — | 69 | 7·2 | — | 1 | 2 | 3 | 2 | 1 | 7 | 16 | 1·7 | 208 | 21·7 |
| Lambeth | 296,724 | — | 66 | 24 | — | 2 | — | 6 | 16 | — | — | 114 | 5·0 | — | 2 | 2 | **3** | 1 | 2 | 7 | 17 | 0·7 | 380 | 16·4 |
| Battersea | 167,338 | — | 49 | 34 | — | — | — | 1 | 20 | — | 1 | 105 | 8·2 | — | 1 | 1 | 3 | 1 | — | 3 | 9 | 0·7 | 208 | 16·4 |
| Wandsworth | 338,998 | — | 149 | 110 | — | 6 | — | **1** | 23 | 1 | — | 290 | 11·2 | — | — | 2 | 5 | 3 | 1 | 8 | 19 | 0·7 | 323 | 12·5 |
| Camberwell | 262,020 | — | 65 | 36 | — | 1 | — | — | 21 | **1** | — | 124 | 6·2 | — | — | — | 3 | 3 | — | 11 | 17 | 0·8 | 334 | 16·4 |
| Deptford | 109,182 | — | 44 | 10 | — | 1 | — | 2 | 15 | 1 | — | 73 | 8·7 | — | — | 1 | — | 3 | — | 5 | 9 | 1·1 | 151 | 17·8 |
| Greenwich | 96,037 | — | 46 | 16 | — | 1 | — | — | 5 | 1 | — | 69 | 9·4 | — | — | — | 3 | — | — | 2 | 5 | 0·7 | 93 | 12·4 |
| Lewisham | 172,433 | — | 30 | 23 | — | — | — | — | 11 | — | — | 64 | 4·8 | — | — | 1 | 5 | 1 | — | 4 | 11 | 0·8 | 177 | 13·2 |
| Woolwich | 122,836 | — | 32 | 32 | — | — | — | 1 | 10 | 1 | — | 76 | 8·1 | — | — | — | 1 | 1 | — | 1 | 3 | 0·3 | 137 | 14·9 |
| Port of London | — | — | — | 1 | — | — | — | — | 1 | — | — | 2 | — | — | — | — | — | — | — | — | — | — | — | — |

* Including membranous croup. † The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

death-rates from this disease were recorded in Islington, Shoreditch, Bethnal Green, Stepney, Southwark, Bermondsey, and Deptford. The 10 deaths from enteric fever were 3 below the corrected average number, and included 2 in Lambeth. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in St. Marylebone, Finsbury, Shoreditch, Bethnal Green, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London during the month from the principal infectious diseases, excluding diarrhœa, was 29·7 per cent. below the average.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

Deputy Surgeon-General George Welch has been promoted to the rank of Surgeon-General in His Majesty's Fleet (dated Dec. 13th).

Fleet-Surgeon Walter Godfrey Axford has been promoted to the rank of Deputy Surgeon-General in His Majesty's Fleet (dated Dec. 13th).

The undermentioned have been entered as Surgeons for temporary service in His Majesty's Fleet:—Dated Dec. 6th: Stanley Howard Miles and Arthur Oliver Gray. Dated Dec. 9th: Hugh Brown Lawrie, Donald Murray Connan, and Paul Currey Gibson.

### ARMY MEDICAL SERVICE.

Colonel Robert S. F. Henderson, K.H.P., is retained on the Active List, and to be supernumerary (dated Dec. 11th).

The undermentioned to be temporary Colonels: Temporary Lieutenant-Colonel Arthur E. J. Barker (Major, 3rd London General Hospital, R.A.M.C. T.F.) (dated Nov. 26th) and Fleming Mant Sandwith (dated Nov. 27th).

### ROYAL ARMY MEDICAL CORPS.

Supernumerary Lieutenant-Colonel George A. T. Bray is restored to the establishment (dated Nov. 25th).

Major Alfred Wright, Reserve of Officers, to be local Lieutenant-Colonel whilst Senior Medical Officer, Cape Town (dated Nov. 5th).

The undermentioned are granted temporary rank whilst employed with the Halifax War Hospital:—Dated Nov. 25th: As Lieutenant-Colonel: John Fred Woodyatt. As Major: Arthur Drury, John Crossley Wright, and Tom Harold Hunt.

Temporary Captain Thomas Watts Eden to be temporary Major (dated Nov. 14th).

Temporary Honorary Captain Harold Pritchard to be temporary Honorary Major whilst serving with No. 1 British Red Cross (Duchess of Westminster's) Hospital (dated Dec. 11th.)

The undermentioned to be temporary Captains:—

Dated Nov. 10th: Cecil Charles Bullmore.

Dated Nov. 16th: Alfred Tennyson Smith.

Dated Nov. 17th: Joseph Burfield and John Smyth Morrow.

Dated Nov. 21st: John Francis Robert Gairdner.

Dated Nov. 22nd: William Rankin, Norman Henry Oliver, and William Poole Henley Munden.

Dated Nov. 23rd: John Lawrence Rentoul.

Dated Nov. 25th: Alexander Edmond Knight.

Dated Nov. 26th: Gilbert Charles Chubb.

The undermentioned temporary Honorary Lieutenants to be temporary Lieutenants:—

Dated Nov. 10th: Charles Carrick Brewis.

Dated Nov. 15th: Allan Hawkins Morley, Thomas Walker Melhuish, and William Durward Cruickshank.

The undermentioned to be temporary Lieutenants:—

Dated Oct. 25th: Harold Edward Sutherland Stiven.

Dated Oct. 27th: James St. Pierre Knight.

Dated Oct. 30th: Charles William Sharp.

Dated Nov. 9th: David William Jones and Lancelot Toke Burra.

Dated Nov. 10th: Robert Lewers Keown, James William Fox, Lionel John Hood, James Littleton Lawry, Charles Owen Jones, Samuel Vernon Robinson, Cecil Hubert Gostwyck Gostwyck, Henry Dobree Woodroffe, George Elsworth, George William Gower, Mark Anthony, William Roche, George Herbert Heywood Russell, Marcus Mackenzie, Leonard Mortis Webber, Victor Howard Lucien MacSwiney, Alger Roy Oram, William Gemmill, Arthur Barrett Cardew, Charles Derwent Walker, and Thomas John Ryan.

Dated Nov. 11th: Henry Charles Heathcote, Clement Alston Hughes, Seymour Alfred Millen, and Horace Lance Flint.

Dated Nov. 12th: Edward Morgan Fannin, Lancelot Moyle Breton, John Ritchie Richmond Ritchie, Geoffrey Troughton Foster Smith, Herbert Tomlin, Archibald Turner Macleod Blair, John Arthur Rinder Glennie, and Thomas Buckley Williams.

Dated Nov. 14th: Henry Bourne, Cuthbert Lindsay Emmerson, Richard Sydney Jenkins, and Walton Ronald Wilson.

Dated Nov. 15th: Lloyd John Hollis Oldmeadow, Horace Montague Dimock Townshend, Peter Mortimer Turnbull, John Hobart Nixon, Hugh Crichton Miller, James Muir Nelson Paton, Thomas Mayne Reid Waddell, Ainslie Booth, Ernest Frederick Reeve, Harold Hugh Fairfax, Henry Whitehead, Robert Peel Thomson, George William Peake Maitland, Henry Holt, Hugh O'Neill, Eric Francis Buckler, Charles Fraser, Richard Ernest Howell Leach, Gerald Waddington Beresford, James Edward Russell Orchard, Eric Delefield Lindow, Gerald Laurence, Frederick Charles Carlé, William Bainbridge, Cecil Charles Brandon Thompson, Eustace Robert Barton, George Hely Hutchinson Almond, Ronald Gray Gordon, Francis James Lidderdale, Alfred Ridley Hargreaves, and James Walter McDonald.

Dated Nov. 16th: John Spears and Alexander Montgomery.

Dated Nov. 17th: William David Rose, Dominick Thomas O'Flynn, John George Dods, Isaac Flack, Henry Dean Haworth, Herbert Barford Minshull, Arthur William Thirkill Whitworth, Joseph Burnett Wilman, Vivian Ernest Ridewood, and James Alexander Davidson.

Dated Nov. 18th: Frank Howard Lawson, Thomas Russell, Alfred William George Woodforde, Ernest Cottew Moore, Robert Nimmo Watson, Thomas McGibbin Fletcher, Hugh Smith, John Cropper, Anthony Alfred Watson, Frederick William Rigby, Andrew Chalmers Fleming, Ernest McIntyre, Octavus Walter Bateman, and Rae McRae.

Dated Nov. 19th: Philip O'Connell White, Francis Charles Lees, Gerard Ford Porter, George Vigers Worthington, and Richard Benedict Hennessy.

Dated Nov. 20th: Francis Arthur Winder, Alexander Whytte, John Hutchinson Crofton, Joseph Hume Patterson, Charles James Lodge Patch, Paul Jenner Verrall, Robert Dillon Lemon, William Ernest Gemmell, Edward Walter Longden, Peter Lornie, Arthur Mudie, Alexander John Reid Taylor, William Thomson Munro, Martyn Wilfred Baker, Archibald Randolph Fulton Douglas, John Aitken Gilfillan, and Raymond John Jones.

Dated Nov. 21st: Henry Ellis Robinson, Simon Simons, Hubert Henry Lacey Ellison, William Sugden Williamson, and Walter Dickson.

Dated Nov. 22nd: Stephen Infield, Harry Bacon Wilkinson, Arthur Llewellyn Vaughan, David Clow, William McConnell, James Thomas Reardon, Douglas James Guthrie, Edward Albert Seale, Douglas Charles Murray Page, Louis Levy, Reginald William Gemmell, Arthur Wellington Saul MacComiskey, Gilbert Bahn Thwaites, Ernest Charles Lambert, and Edward William Dacre Hardy.

Dated Nov. 23rd: William Duke Georges Mulloy, William Gloag Galletly, Allan Douglas Low, John Honeyford, John Craig, William Edwin Plummer, James Alfred Frost, Henry Dewi Hampton Willis-Bund, and Herbert Pank Thompson.

Dated Nov. 24th: Joseph Humphreys, David Whiteside Maclagan, John Alexander Black, James St. Laurence Kirwan, and William George Silvester.

Dated Nov. 25th: Reginald Roberts, Edward Prall, William Joseph Edward Stuttaford, Sydney Buxton Legge, Elie Philip Marett, Arthur Bailey Pugh, Alfred Malseed, Joseph Sydney Dickson, William Tyrrell Patterson, George Edwin Lindsay, Maurice Angelo Spotswood, John Rudolf Elwood, Hugh Francis Williams, Frederick William Daniels, Adam Gray, and Alec Barber.

The undermentioned officers of the C.A.M.C. to be temporary Lieutentants:—

Dated Nov. 5th: Charles Edgar Wilson, Harold Chester Sutton, Henry Brown Moyle, Harold Percival Rogers, Alfred Westland Nixon, and Harry Blackett Stacpoole.

Dated Nov. 9th: Captain Oscar Glennie Donovan, and Lieutenants Howe Alonzo Jones, Lewis Mark Morton, Frederick Joseph Richardson Forster, Loren Wilson May, Thomas Clarence Routley, and Charles Leon Gass.

Dated Nov. 13th: Captain Melville Hamilton Embree, and Lieutenants Gordon McIntyre Dale, Gordon Archibald McLarty, Stanley Arthur Walker, Wallace Balfour Seaton, Colin William MacRury, William Ernest Dean, Robert Home, Andrew Rutherford Riddell, George Crerar McIntyre, John Grant Cunningham, and Robert Inkerman Harris.

Lieutenant Frederick John Cleminson, R.A.M.C. (T.F.), to be temporary Lieutenant (dated Oct. 21st).

William Edward Nickolls Dunn to be temporary Honorary Lieutenant whilst serving with the British Red Cross Hospital, Netley (dated Nov. 28th).

The appointment to a temporary Lieutenancy of William R. S. Watkins is antedated to Dec. 15th, 1914.

The undermentioned temporary Lieutenants relinquish their commissions:—

Dated Dec. 1st: Donald J. G. Grant.

Dated Dec. 15th: Arthur H. Flannery.

Temporary Lieutenant Alfred C. Warren relinquishes his commission on account of ill-health (dated Dec. 12th).

### SPECIAL RESERVE OF OFFICERS.

*Royal Army Medical Corps.*

The undermentioned Lieutenants to be Captains:—

Dated Nov. 1st: Ralph R. Thompson, Joseph H. Bayley, James Lawson, Norman Graham, and Arthur E. Richmond.

Dated Nov. 3rd: Francis L. P. G. Bennett and Patrick A. Clements.

Dated Nov. 5th: Geoffrey B. Egerton.

Dated Nov. 10th: Robert O. C. Thomson and William Murdock.

Dated Nov. 13th: David W. J. Andrews.

Dated Nov. 17th: William J. Webster.

Dated Nov. 27th: George G. Cooper.

Lieutenant (on probation) Matthew J. Graham is confirmed in his rank.

### TERRITORIAL FORCE.

*Royal Army Medical Corps.*

West Lancashire Field Ambulance: To be Lieutenants: Robert Findlay and Norman McCall-Smith.

Western General Hospital: To be Lieutenants: William Sankey and Richard Willan.

London Sanitary Company: To be Lieutenants: Edgar Bernard Argles, Martin Shaw Briggs, and Sidney Langton Bartholomews.

East Lancashire Casualty Clearing Station: Thomas William Leighton to be Lieutenant.

North Midland Field Ambulance: To be Lieutenants: David Ashley Wilson and James Howard.

Northumbrian Field Ambulance: The undermentioned Lieutenants to be Captains: Cecil D. Rogers, Robert Raffle, and John Steedman.

Southern General Hospital: Lieutenant Arthur H. Newton to be Captain, and John Edwin Ford Palser to be Captain, whose services will be available on mobilisation.

Home Counties Casualty Clearing Station: To be Captains: Captain Richard W. Brimacombe, from Attached to Units other than Medical Units, and Captain Douglas Hay Scott, from Highland Field Ambulance.

South Midland Mounted Brigade Field Ambulance: Lieutenant Edward P. Dawes, from Attached to Units other than Medical Units, to be Lieutenant.

East Lancashire Field Ambulance: Lieutenant Thomas Hayhurst to be Captain.

Home Counties Field Ambulance: Lieutenant William W. Maxwell to be Captain.

London General Hospital: Major (temporary Lieutenant-Colonel) Herbert P. Hawkins, from London General Hospital, to be Major. Major Herbert P. Hawkins to be Lieutenant-Colonel on the permanent Personnel. Captain Philip H. Mitchiner, from List of Officers Supernumerary for Service with the Officers Training Corps, to be Captain on the permanent Personnel.

West Lancashire Casualty Clearing Station: Lieutenant Ronald K. Merson to be Captain.

West Riding Field Ambulance: Herbert Arthur Beetham to be Lieutenant.

Wessex Field Ambulance: The undermentioned to be Lieutenants: Frederick Joseph Mary Kennedy and Thomas Joseph Costello.

London Field Ambulance: Olaf Gleeson to be Lieutenant.

*Attached to Units other than Medical Units.*—The undermentioned Lieutenants to be Captains: George S. Glass and William R. Collingridge. To be Lieutenants: Alfred Lang Bodley, Frank Walter White, and Fred Newton Walsh.

### THE TERRITORIAL DECORATION.

The King has conferred the Territorial Decoration upon the undermentioned officers:—Major David J. Penney, attached to 4th Highland (Mountain) Brigade, Royal Garrison Artillery; Major James Taylor, attached to the 6th Battalion, the Gordon Highlanders; Major Joseph Robinson, attached to the 3rd Battalion, the London Regiment; Lieutenant-Colonel Frederic H. Westmacott, 2nd Western General Hospital; and Major James A. Clark, atached to the 6th Scottish Provisional Battalion. North Midland Casualty Clearing Station: Lieutenant-Colonel William P. Peake.

### INDIAN MEDICAL SERVICE APPOINTMENTS.

It has already been announced that after the open competitive examination held last July for admission to the Indian Medical Service no similar examination would be held during the continuance of the war, but that such appointments as might be required to meet the absolutely indispensable needs of the Service would be made by nomination by the Secretary of State. To assist him in making these appointments, which will be limited in number to the absolutely indispensable needs of the Service, Mr. Chamberlain appointed a Selection Committee who will summon and interview such applicants as may appear to be *primâ facie* suitable, and make recommendations for appointment. Applications for appointment should be addressed to the Secretary of the Military Department, India Office, Whitehall, S.W., and should contain concise particulars of the applicant's medical degrees and career. Applicants must be over 21 and under 32 years of age at the time of application. Particulars regarding pay, promotion, &c., in the Service can be obtained from the Secretary, Military Department.

## SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

### *L'Affaire Sauerbruch.*

THE "affaire Sauerbruch," as it became known in Switzerland, has been liquidated at last. The facts, stated quite baldly, are as follows. Professor Sauerbruch, the well-known German surgeon, is the head of the surgical clinic of the Zürich Cantonal Hospital. At the outbreak of the war he seemed to think that patriotism to be deep should also be aggressive, and he intimated to the Swiss assistant doctors at the clinic that relations between them and him would become strained unless they shared his views upon the world war and its causes. The Swiss doctors resented this attitude, and one of them, Dr. Freiz, frankly told Professor Sauerbruch that his sympathies were entirely on the side of the Allies and that no personal considerations would change them. Professor Sauerbruch expressed indignation at Dr. Freiz's wrongheadedness, strained relations followed, and eventually the German professor's antagonism led to the Swiss doctor's resignation. For reasons of professional solidarity and personal agreement the other Swiss doctors resigned their positions in the surgical clinic. The echoes of the affair were heard throughout Switzerland and it soon ceased to be a purely medical one. The Zürich Cantonal Government appointed a commission to inquire into the whole question, and their report, just issued, has given entire satisfaction to the Swiss medical profession and the Swiss public.

The following passage from the report indicates its purport:—

> The commission is of opinion that strict discipline should be maintained at the hospital. But it holds that, while observing this discipline, the subordination of the assistant doctors towards the chief doctor and their relations with him should be such as can be demanded in an institution belonging to a democratic State, due regard being paid also to the dignity of the Swiss medical profession.
>
> A Swiss never wishes to suppress his personality and to become the passive instrument of his superior. The Government of Zürich does not desire that the Cantonal Hospital should be regarded as a barracks. If we summon foreigners to the heads of our institutions we expect and we insist that they should adapt themselves to our customs. We only demand a state of things which is demanded elsewhere. In Germany foreign professors are naturalised by the fact of their nomination. In Switzerland we do not go as far as that. We are grateful if distinguished foreign savants come to us as professors, and we do not compel them to become naturalised. But what we do insist is that they should realise they are teaching at a Swiss university.

The municipal council of Zürich is rebuked by the commission for allowing itself to be influenced throughout the affair by the fear that Professor Sauerbruch might leave Zürich. The report concludes:—

> The commission does not want the resignation of this savant of great reputation, but it has no intention of capitulating before the threats of a professor.

# Correspondence.

"Audi alteram partem."

## COLD-BITE + MUSCLE-INERTIA = TRENCH-FOOT.

*To the Editor of* THE LANCET.

SIR,—Venous stasis, the anatomical basis of the trench-foot, is not simply an effect of cold or of wet, or of both. The feet may be aglow after a ten-mile snowshoe tramp with the thermometer 20° below zero. The men actively at work on the big timber rafts in Canada have wet and cold feet for weeks without any ill-effects. So long as the muscles of the legs work freely the circulation in the feet is good. It is not the cold, nor the wet, nor the puttees, nor the type of boot; the damaging factor is the comparative inertia of the leg muscles. To keep the trenches dry will help, to shorten the time spent in them will help, special socks may help, but the disabling effects of cold-bite are inevitable in feet attached to legs whose muscles have not play enough to maintain a circulation hampered by gravity and cold and wet.

I am, Sir, yours faithfully,

Oxford, Dec. 12th, 1915. WILLIAM OSLER.

## "TRENCH FEVER."

*To the Editor of* THE LANCET.

SIR,—Captain G. H. Hunt and Major A. C. Rankin give in THE LANCET of Nov. 20th a most interesting description of their research to ascertain the cause of the intermittent pyrexia known as trench fever. Although they have not so far arrived at any positive conclusion as to its cause, they have at all events excluded micro-organisms, protozoal or bacterial, as a possible cause of the fever.

It did not, apparently, occur to them to investigate the atmospheric environment of the men in the trenches as a possible cause of this fever, for I am unable to find any reference to it in their paper, with the exception that nearly all their patients suffering from this fever had been exposed to cold and damp from sleeping on wet ground or from rain. Cold and damp are, however, very indefinite terms unless supplemented by actual readings of the dry and wet bulb thermometers. A patient in the initial, chilly stage of pyrexia may feel the air cold, although the thermometer shows it is warm, 14·6° C. (58·0° F.) to 22·2° C. (72·0° F.) or even hot, i.e., above 22·2° C. (72·0° F.). So also a patient in the hot stage of pyrexia may feel the air dry when the hygrometer shows it to be damp, i.e., having a relative humidity of from 66 per cent. to 80 per cent., or even very damp, i.e., above 80 per cent. of saturation. In Ravenstein's classification of climates he confines the term cold to those climates having a mean atmospheric temperature of 0·0° C. (32·0° F.) or lower, and the term damp to those climates which have a mean atmospheric humidity between 66 per cent. and 80 per cent. of saturation.

In order to appreciate the impediment to loss of heat from the body by radiation, by evaporation, and by conduction and convection, presented by the atmospheric conditions in the trenches it would be necessary to have hourly records of the dry and wet bulb temperature, and the rate of movement of the air for a continuous period of 24 hours. If such records were available then it would, within certain limits, be a simple matter to show whether the physical atmospheric conditions in the trenches are such as would raise the body temperature of those immersed therein above normal, i.e., cause fever, and also whether the fever so caused would be of intermittent, remittent, or continued type. For we have a standard of physical atmospheric conditions which are known to raise the body temperature of many of those immersed therein to 37·7° C. (100·0° F.) and even higher in less than four hours. This standard is to be found in the valuable reports of the Departmental Committee on Humidity and Ventilation in the spinning and weaving sheds in Lancashire and in Ireland. In these reports are recorded certain definite combinations of atmospheric temperature, humidity, and stagnancy which were found by observation to raise the body temperature of many of the operatives above normal, and also the degree to which the body temperature was raised thereby. By comparing the atmospheric conditions in the trenches with these it would be possible to see whether the former are such as would cause fever and also whether the type of such fever would be intermittent, remittent, or continued.

The trenches are apparently deep, narrow, sinuous ditches, excavated from the soil and partly covered, in which the air does not circulate very freely, and often having wet floor and sides. When such trenches are crowded with men, each having a body temperature of 36·6° C. (98·4° F.) and giving off water vapour freely from his skin and lungs, the air in the trenches must rapidly become warm or even hot, damp, and stagnant, especially in the warm or hot seasons, similar to the atmosphere which raised the body temperature of the operatives in the spinning and weaving sheds to 37·7° C. (100·0° F.) or even higher in less than four hours. If the physical atmospheric conditions are recorded as I have suggested, then by comparing the details of temperature, &c., with those of the atmosphere which raised body temperature in the spinning and weaving sheds it could be seen whether the atmospheric conditions in the trenches are such as would cause fever.

If any medical officer or meteorologist going into the trenches desires it I will be glad to furnish him with a list of 56 different combinations of atmospheric heat (between 69·0° F. and 90·0° F.), humidity, and stagnancy which were found to raise body temperature to 37·7° C. (100·0° F.) and even higher in less than four hours. Then with the aid of dry and wet bulb thermometers and a delicately constructed anemometer he could easily prove whether the atmospheric conditions in the trenches are such, especially in the summer and autumn, as would cause fever or not.

I am, Sir, yours faithfully,

MATHEW D. O'CONNELL, M.D.

Harrogate, Dec. 8th, 1915.

*To the Editor of* THE LANCET.

SIR,—In his letter of Nov. 27th Dr. Henry Robinson suggests that some, if not all the reported cases of trench fever were examples of paratyphoid fever. The following points would go to disprove this supposition:—

1. The temperature chart, with its characteristic fall to normal about the fifth day, is very unlike that of paratyphoid fever.
2. The pulse is not slowed.
3. No rash, although repeatedly looked for, has ever been found.

4. The spleen is never enlarged.
5. Diarrhœa is never a symptom.
6. Similar cases have been examined by the standard method for the presence of agglutinins with negative results.
7. All bacteriological examinations were negative.

Dr. Robinson makes the statement that blood cultures are positive only in the minority of cases of paratyphoid; this may be true in the later stages of the disease, but certainly does not hold good for the earlier stages, and all our patients came under observation early.

What justification is there for a diagnosis of paratyphoid fever on an atypical temperature chart and in the absence of any clinical or bacteriological evidence of the disease?

We are, Sir, yours faithfully,

G. H. HUNT,
A. C. RANKIN.

In the Field, Dec. 6th, 1915.

## MASSAGE AND THE WAR.

*To the Editor of* THE LANCET.

SIR,—In view of the present excessive demand for massage treatment occasioned by the war, it has seemed to me worth while to sketch briefly some of the qualifications necessary for the carrying out of such treatment. The greatest handicap to efficient treatment up to the present has been the employment haphazard of all sorts and conditions of so-called masseuses. For one hears of patients being treated by ladies who have had only a few lessons, or by those who actually say that they are natural masseuses and require none; and it seems that the general public is still unable to distinguish between a masseuse and a Turkish bath attendant. It is against this very evil that the Incorporated Society of Trained Masseuses has for years made a firm stand, and an attempt has been made by this body to standardise the scientific art of massage by holding examinations and by fixing a definite time during which pupils must study. But even now many members of the medical profession do not take the trouble, when engaging a masseuse, to make inquiries as to her training and diplomas.

In order to admit of successful massage-therapy, there are three essential qualifications with which the masseuse must be endowed. These are (1) skill in technique, not only of massage, but also of movements, including those passive, assisted, active, and resisted; and also of various exercises with mechanical resistance; (2) a good general knowledge of anatomy and elementary physiology, as well as of the diseases and injuries which may be treated by massage and of the methods employed; (3) experience in the treatment of all kinds of cases with which she is likely to come into contact. This should be gained, for preference, in a good general hospital. Far too few and too vague directions are commonly given by the practitioner to the masseuse when a case is sent to her for treatment; and even the experienced masseuse is considerably handicapped by lack of clinical information. For instance, a case of fracture is sent to her for massage treatment. The masseuse is given no further directions, and she does not see the X ray plate. It is left to her to decide what massage to give and what movements, and whether they should be active or passive. Is it surprising, then, that so many of these cases end in disaster? Again, the length of time devoted to the study and practice of massage is all too short. Whereas in England a course of six months is usually considered sufficient; in Sweden, on the other hand, at the Central Institute, Stockholm, the prescribed curriculum extends over three years.

No one who has not studied the subject can realise the enormous variety of massage treatments possible for different complaints. At the present time it is usually left to the masseuse to make her own choice as to which to employ. There is all the difference in the world between the deep back kneading given to a case of chronic lumbago, and the delicate stroking and kneading required for painful muscular spasm following a gunshot wound. Even general massage can be given in different ways, as those who have experienced it at the hands of more than one masseuse can testify. Again, there is the question of combining movements with the massage and of the exact amount of movement to be given and whether it shall be active or passive. This is of supreme importance in cases of myocardial weakness. Since all this knowledge must be acquired by a masseuse before she is fit to be entrusted with patients, the danger of allowing anyone to practise massage at once becomes manifest. Fortunately the War Office has issued an order that no masseuse shall work in a military hospital unless she is approved by the Almeric Paget Corps; but the voluntary hospitals are still allowed to make their own arrangements, and, in many cases, owing to a lack of funds, they cannot afford to pay a staff of fully trained masseuses.

The best solution of this difficulty appears to be that in every hospital where massage treatment is employed and where there is no medical officer who has studied the subject there should be an experienced masseuse in charge who would see the cases with the medical officer in charge of the beds, and who would explain to her assistants the exact treatment they are to give in each case. These assistants should be qualified masseuses if possible, but failing that, they should be pupils who are receiving regular instruction and who work only under the direct supervision of their instructress. They should not be allowed to practise massage without supervision until they have taken the Incorporated Society of Trained Masseuses certificate in massage.—I am, Sir, yours faithfully,

E. BELLIS CLAYTON, M.B., B.C. Cantab.,
Captain, R.A.M.C. (T.); Medical Officer in Charge of the Electrical and Massage Departments at King's College Hospital and the 4th London General Hospital.

Dec. 13th, 1915.

## PARATYPHOID.

*To the Editor of* THE LANCET.

SIR,—In the annotation under the heading Paratyphoid in THE LANCET of Nov. 27th you state that although it is still a matter of conjecture how paratyphoid fever is conveyed from patient to patient, nevertheless for the moment suspicion rests more strongly on the mosquito than the louse. This is a highly misleading statement, since neither of these insects is under any suspicion in this connexion. We were not present at the Royal Society of Medicine when the second meeting on paratyphoid was held, but there can be no doubt that Colonel Sir William Leishman was alluding to "so-called" trench fever or that disease for which a name is still lacking and not to paratyphoid when he suggested the possible responsibility of the mosquito rather than the louse in the spread of case-to-case infection. At the commencement of your annotation you strike the right note in the assertion that the carrier is a principal factor in the spread of paratyphoid fever.

We note also that on p. 1191 of the same issue you report Dr. H. L. Tidy as drawing the following

inferences: 1. A considerable number of paratyphoid patients who have been recently protected against typhoid (within eight months) do not show typhoid agglutinins. 2. Febrile conditions cause the disappearance of typhoid agglutinins from the serum of persons recently protected against typhoid fever. 3. A positive Widal reaction is of equal value (diagnostically) in the case of inoculated and uninoculated persons. With regard to the first contention we beg to state that in a series of 171 such cases proved to be paratyphoid fever by the isolation of the bacillus as well as by their specific agglutinations, the agglutinating power to B. typhosus (using standard cultures) was as follows:—

In 157 cases the serum agglutinated B. typhosus in a dilution of at least 1 in 250; in 10 cases agglutination took place in a dilution of 1 in 100; in 2 cases the maximum dilution was 1 in 50 and in 2 cases agglutination was only obtained in a dilution of 1 in 25.

It is worthy of note that in a great majority of cases of the first group agglutination took place in dilutions considerably greater than 1 in 1000.

From this it is obvious that the febrile condition caused by paratyphoid does not cause the agglutinins to B. typhosus to disappear from the blood of persons protected against typhoid fever, and we can only say that we have not found any such disappearance in other febrile conditions that have presented themselves for examination. This assertion is based on the analysis of 97 cases of varied febrile disorders other than typhoid or paratyphoid fever occurring in protected persons. Of these 57 showed agglutination to B. typhosus in greater dilution than 1 in 250; 24 showed agglutination in 1 in 100; 11 showed agglutination in 1 in 50; 3 showed agglutination in 1 in 25; while in only 2 cases was there no agglutination in this last titre.

The logical deduction from the above, confirmed by experience, is that a single positive Widal reaction is not diagnostic of typhoid fever in protected persons. On the other hand, an accurate diagnosis of typhoid fever in protected persons who are not suffering from paratyphoid fever can be obtained by the Widal reaction if a series of observations are made, since a marked rise and fall in the agglutination titre will take place during the course of the disease.

We are, Sir, yours faithfully,

G. DREYER,
Captain, R.A.M.C.
J. A. TORRENS,
Captain, R.A.M.C.

British Expeditionary Force, France,
Nov. 29th, 1915.

---

*To the Editor of* THE LANCET.

SIR,—As one who had an opportunity of studying a case of paratyphoid fever and reading a paper on the case before the Leeds and West Riding Medico-Chirurgical Society two years ago, the present discussion of paratyphoid fever and trench fever is of interest.

My case had symptoms and signs similar to typhoid fever, but was not definite enough to pronounce typhoid, so I had the blood tested by a bacteriologist. The report was that Widal reaction for typhoid was negative; positive paratyphoid with increase of lymphocytes. The patient was cheerful, did not think himself very ill, had a temperature similar to typhoid, with shivering, pulse normal in the early stage, nausea and vomiting occasionally, duration of rose-coloured spots shorter than typhoid, headache vertical, abdominal pain in the appendix region, enlarged spleen, the tongue furred, with clean sides, tip, and middle, slight cough, tache cérébrale, no diarrhœa, and there was a relapse about five weeks after the commencement of the disease.

I tried to find out the probable cause of the disease two years ago. In reviewing the history of the disease I found the name paratyphoid was introduced in 1896. Schottmüller in 1900–01 was the first to isolate the paratyphoid A and B bacillus. Much credit is due to Bainbridge in England for his investigation of the disease in the Milroy lectures for 1912. In 1913 Dr. James Watt, of Aberdeen, published an article[1] on paratyphoid associated with an epidemic of typhoid fever, and he mentioned in some cases of paratyphoid having at a later date Widal test positive for typhoid.

The disease is more common in France than in England, and I found more information from French medical literature. I suspected the pig as a likely animal for spreading the bacillus paratyphoid B, an animal whose intestinal tract must have many bacilli considering the character of the food it eats, the dried fæces, which may be blown about, inhaled and swallowed in dry and dusty weather. Bainbridge was suspicious of the pig, but failed to detect the bacillus in the excreta of 50 healthy pigs. There is a close relationship between the bacillus of hog cholera and paratyphoid B. The three prominent bacilli of the Salmonella group are bacillus paratyphosus B, bacillus enteritidis aertryche, and bacillus enteritidis Gaertner. Bacillus paratyphoid A is not in the Salmonella group, and the cases of paratyphoid fever in India are due in most cases to this bacillus. The pig is not a common animal in India.

In the paper I read appendicitis was mentioned as caused by the paratyphoid B bacillus. Cases have been recorded where appendicitis has occurred in paratyphoid also with gangrene of the appendix, and also paratyphoid ulcer of the appendix perforating and causing general peritonitis. Post-mortem examination in some cases has shown inflammation and ulceration confined to the lower two feet of the ileum and to the adjacent portion of the cæcum. A theory I mentioned was that there have been more appendicitis cases since motor-cars have existed than before, and whether the dust created by motoring, the inhalation and swallowing of it which comes from all sources, from dried fæces, the animal harbouring in its intestines bacilli of different characters, such as paratyphoid and other bacilli of the Salmonella group, causes appendicitis, is a matter to be proved more fully. Epidemic cases of appendicitis have been recorded, but the bacillus has not been found yet for causing the epidemic; no statement has been made about the paratyphoid bacillus.

Appendicitis is very common in countries where pig meat is eaten, and the paratyphoid B bacillus, according to recent French medical literature, is found in pig meat. During the war the French give accounts showing that the bacilli of paratyphoid B are often denizens of pig meat, and especially of German pork. The Germans are much addicted to such food, even when it is not of the best quality and above suspicion. In this way they take in the paratyphoid bacillus *en masse*. The German trenches are consequently laden with these bacilli, and when our soldiers take possession

[1] THE LANCET, July 19th, 1913, p. 130.

of the trenches they incidentally pick up the paratyphoid bacillus.

The bacilli are not general, but are found at isolated places, and it will be of interest to study the chart which the military medical men are preparing showing the places and trenches where the paratyphoid B cases come from. Many cases are recorded during the dry and dusty weather in the summer more than in the winter, and it is as likely as not that dust from dried fæces containing the bacilli has got into the food or drink. "Trench diarrhœa," as recorded by the French, is no doubt the paratyphoid fever with diarrhœa. In the so-called "trench fever" cases recently published it is not definitely stated that paratyphoid B bacillus was absent, although an examination was made for the enteric group of bacilli.

As paratyphoid fever has come into prominence during the war, and the fighting has been chiefly in the trenches and has been traced to the trenches, the name "trench fever" holds good to be applied to paratyphoid fever caused by the B bacillus.

I am, Sir, yours faithfully,

Leeds, Dec. 6th, 1915. A. E. LITTLE.

## THE SHORTAGE OF DENTAL PRACTITIONERS.

*To the Editor of* THE LANCET.

SIR,—With reference to your annotation in the THE LANCET of Dec. 4th on "The Shortage of Dental Practitioners," I venture to affirm that both the dental profession and the general public are being to a large extent unconsciously misled on this matter. There is no shortage of dental practitioners at all if *bonâ fide* unregistered men are included in the calculations. By *bonâ fide* unregistered men I mean unregistered dental practitioners who are conducting a dental practice on ethical lines, and trusting entirely to their professional capacity to obtain an adequate number of patients to maintain their practice. It is a great mistake to suppose that such men are simply adapters of artificial dentures and that they do not practise conservative dentistry in a very capable fashion. The most vital point which is generally ignored in this unending professional problem is that a large majority of the nation—to wit, the manual labouring classes—cannot generally afford the fees quite legitimately charged by the majority of licentiates in dental surgery who have had an elaborate technical education. And here it must be borne in mind that the earning capacities of dentists and the medical men would part company from the very conditions of their respective callings if the average charges of dentists per time taken by each patient were not considerably higher than those of the general medical practitioner. A medical man can see and attend to a very much larger number of patients than can a practitioner in conservative dentistry in a given time. The number of patients whom the dentist can attend to in the course of a very long professional day is strictly limited, and a series of visits to a registered dentist generally comes very much more expensive than a similar number of visits paid by a general practitioner in medicine. The result of this is that the public to which I have referred patronise the unregistered men who, on account of the conditions of their practice, can afford to charge a very much lower fee than their registered brothers. There are 20,000 at least of these men in practice in the United Kingdom, some good, some bad, and some indifferent; but whatever they may be, the British laws allowed them to spring into professional existence, continue to allow them to practise, and it is merely an ostrich-like policy of the registered dentists to refuse to recognise their existence. Their existence is very real, and will continue to affect the whole conditions of dental practice in this country.

I therefore venture to differ from the conclusions of your annotation in which you draw the deduction that "the future will see a big demand for the properly qualified man, and with the demand will come the supply." There is only one way in which this can happen so far as the majority of the nation is concerned, and that is for the enormous extension of municipal and school dentistry—in other words, the socialisation of the larger sections of the dental profession.

I should have believed this a possible solution of the problem before the war; with the crushing taxation that the nation will have to bear for many years I no longer believe it to be within the region of practical politics.

I am, Sir, yours faithfully,

EDITOR OF "THE DENTAL SURGEON."

Henrietta-street, W.C.

*** We are happy to publish this difference of opinion from our expressed view, and appreciate the position of the Editor of the *Dental Surgeon*. The fact remains that admission to the Dental Register can only be obtained by those who have been tested by examination, and are thus proved to be up to a certain standard. It is quite possible that some of those who have not been thus tested may acquire a degree of efficiency, but in the main their standard cannot, we believe, approximate to that of those who have undergone systematic instruction at the hands of competent teachers.—ED. L.

## ILLUMINATION IN OPERATIONS.

*To the Editor of* THE LANCET.

SIR,—A letter under the above heading in THE LANCET of to-day's date, by Mr. J. L. Aymard, recalls to my mind a suggestion for illuminating the operation area by different methods of direct illumination, as contrasted with the reflected illumination from a head-light. Here, however, I only wish to mention a method of mine for illuminating the bladder, which Lieutenant-Colonel J. F. Dobson, of Leeds, adopted when operating on that viscus. After opening the bladder by the extraperitoneal or intraperitoneal method, the cystoscope is passed, and the light switched on. The resulting illumination is really wonderful, and has to be seen to be realised. The ordinary cystoscope can be used in the vast majority of bladder operations, the light being turned in any direction by simply rotating the stem of the cystoscope. In other cases the cystoscope can be used with a detachable terminal piece, to which any size and shape of bulb can be applied after this "detachable" cystoscope has been passed.

The advantages claimed for this method are many, all of which enable the operation to be done in about half the usual time, a great factor to be considered in preventing shock in many lengthy bladder operations. There is no fear of that obscurity in illumination which must necessarily result where a head-light has to encounter the overhanging wound edges. The operator's head need not be uncomfortably fixed in one particular position, and there is no necessity for the

summoning of additional help to constantly change the direction of the head-light. The increased luminosity enables the surgeon to diagnose the condition more accurately, and prevents any small sessile growth or bleeding point from being overlooked. There is greater ease in finding the various structures, such as a detached ureter, there being no further need to expose the renal end of the ureter and passing a probe to expose the vesical end.

I well recollect an operation performed by Colonel Dobson in which it was necessary to remove a portion of the bladder with the vesical end of one of the ureters for a large villous growth. The ease with which he found the detached end of the ureter, and the simplicity with which he stitched up the bladder wound and fixed the end of the ureter in record time, was no doubt due to a great extent to this simple adaptation of the ordinary cystoscope. I am, Sir, yours faithfully,

Leeds, Dec. 4th, 1915. SAMUEL SAMUEL.

## PROFESSOR C. A. EWALD.

*To the Editor of* THE LANCET.

SIR,—I was glad to see in your columns the tributes of some of my colleagues to the memory of the late Professor Ewald, because at the time of his death I was retarded by many engagements. It may not be too late for me now to add my tribute to theirs, and this the more as the Professor and Frau Ewald had been old and kind friends of my wife and myself for many years; and not they only but also through other friends the professor's gifted artist sister-in-law, the portrait painter.

Of Ewald's qualities as a professorial colleague, of course, I cannot speak; what we do testify is to the unselfish and unfailing aid and kindness of the professor and his accomplished wife—to whom from a distance we offer our sincere sympathy—to all their English friends. In 1869 I happened to see on the moment of its publication Kussmaul's paper on gastric lavage, and at once instituted the method in the Leeds Infirmary; this led to our acquaintance with Ewald, to whose pioneer work in disorders of the stomach we are all indebted. The last communication I had from him was an enclosure of the professorial protest by which he gently hoped to influence English opinion on the causes of the conflagration. All that it effected for me was to realise the amazing official and venal perversion of the truth in Germany.

One of the saddest reflections of a sad time is the sense that, at any rate for the brief remnant of my life, we have lost the friendships of many German colleagues for whom we had, and have still, an affectionate regard. The names of many tremble on my lips, but it is wiser to remember in silence. Once again, in the words of Tacitus, "Pravus et callidus bonos et modestos anteibat."

I am, Sir, yours faithfully,

Cambridge, Dec. 11th, 1915. CLIFFORD ALLBUTT.

## STOMOXYS CALCITRANS AS A CARRIER OF THE VIRUS OF POLIOMYELITIS.

*To the Editor of* THE LANCET.

SIR,—In previous communications[1] I have referred to the fact that my personal observations when inquiring into cases of poliomyelitis occurring in Norfolk afford strong additional evidence in support of the theory that infection is conveyed by stomoxys calcitrans. I have found this fly in numbers in the houses in which the cases occurred in every instance which I have personally investigated, and stables, cowsheds, or bullock-sheds have always been noted in the immediate neighbourhood. The most recent case I have inquired into affords additional weighty evidence, such as I have sought hitherto without success.

On receipt of a notification of poliomyelitis in the Freebridge Lynn rural district in Norfolk I asked Mr. C. S. Woodwark, the district medical officer of health, to be so good as to secure specimens of flies in the house, *especially those seen at the window*, and to note whether stables or cowsheds were near. Mr. Woodwark sent me several specimens which proved to be chiefly stomoxys, and in answering in the affirmative my question as to cowsheds, &c., gave the additional suggestive information that in a cowshed about 100 yards distant a beast had recently died of an obscure disease with paralytic symptoms which the veterinary surgeon called in was unable to account for. The child who was later notified as suffering from poliomyelitis had been "bitten" by flies. The beast had been disposed of, so further investigation was out of the question, but I venture to think the evidence available is strongly corroborative of the view that stomoxys is the carrier of poliomyelitis infection. I have previously stated that this might explain the high comparative incidence of the disease in rural as compared with urban areas.

I am, Sir, yours faithfully,

Norwich, Nov. 23rd, 1915. J. T. C. NASH.

[1] THE LANCET, Jan. 16th (p. 152) and Feb. 27th (p. 464), 1915; Public Health, December, 1914.

# Obituary.

## GEORGE WALTER STEEVES, B.A. NEW BRUN., M.D. BRUX., M.R.C.S.

WE regret to announce the death of Dr. George Walter Steeves, which occurred on Dec. 11th in a nursing home. He was born at St. John, New Brunswick, and was the only surviving son of the Hon. W. H. Steeves, Senator of the Canadian province and a Father of Confederation. He was educated at the University of New Brunswick, there taking a degree in Arts. Coming to England at the age of 21, he married Agnes, the daughter of the late G. T. Soley, of Liverpool, and shortly after began the study of medicine at St. Thomas's Hospital, London. He took the diplomas of L.R.C.P. Lond. and M.R.C.S. Eng. in 1880, and started practice in Liverpool, possessing all the qualities requisite for success. Not only was he thoroughly skilled in medicine, but he had a generous disposition, a taking personality, and a love of children, and these, combined with his professional ability, won for him wide confidence and esteem. In 1885 he took his medical degree at the University of Brussels, and for many years he had a large practice of a very good class in Liverpool as well as a wide circle of friends. Moreover, he had pronounced literary tastes and loved the works of the great masters of English literature. He devoted a great deal of his spare time to the acquirement of rare first editions, of which he possessed a fine collection. Especially he had a great regard for Bacon. He had studied him well, and in 1910 published a most interesting book entitled "Francis Bacon—His Life, Works,

and Literary Friends." This work was very favourably received and its high merit may be judged by the testimony of Sir Sydney Lee, who wrote: "It is undoubtedly the best contribution to Baconian bibliography that has been yet vouchsafed to us." In 1913 he published a collection of essays entitled, "Some Main Issues," and he was the author of several poems, which were greatly appreciated by Canadians who were justly proud of their countryman's attainments.

To return to Dr. Steeves's professional work, he was specially interested in sanitary science, of which he had an extensive practical knowledge and on which he wrote several papers, in the *Nineteenth Century* and elsewhere, of a quite informing character. For many years he was medical officer of health for Toxteth, Liverpool, and physician to the Urban District Hospital, and U.S. sanitary inspector for the port of Liverpool. When he left Liverpool to come to London some years ago the appreciation in which he was held by his professional brethren and by many friends in University and city circles was shown by a handsome testimonial. Since the war began his experience in sanitary science and attainments as a physician led to his being given a command in the National Guard of the City of London. Dr. Steeves was until a few weeks before his death actively engaged in examining recruits in addition to his practice and other duties, his acute illness, which proved fatal, lasting only one week.

In his younger days Dr. Steeves was an athlete, and he was always a fine billiard player and good golfer—in fact, anything he took in hand he did well. He will be greatly missed by all who had the privilege of knowing him, for his sympathetic personality endeared him to all. He leaves a widow but no family.

THE LATE DR. KENNETH W. MILLICAN.—Mr. John W. Knapman, librarian of the Pharmaceutical Society of Great Britain, writes to remind us that in our obituary notice of the late Dr. Millican there is no mention of the fact that he was the first editor of the *Midland Medical Miscellany and Provincial Medical Journal*, which was commenced in 1882 and published in Leicester. The first portion of the title was dropped after the third volume, when Dr. T. M. Dolan became editor.

THE LATE MR. FRANCIS THOMAS HEUSTON.—Mr. F. T. Heuston, M.D. R.U.I., F.R.C.S. Irel., senior surgeon to the Adelaide Hospital, Dublin, died on Nov. 26th at his residence, St. Stephen's Green, Dublin, in his fifty-ninth year. He was a native of co. Tipperary, and was educated at Galway and at the Royal College of Surgeons, Dublin, becoming a Licentiate in 1877 and a Fellow in 1883. He graduated doctor of medicine at the Queen's University in 1878. For some time he was professor of anatomy in the Carmichael School, and afterwards in the School of the Royal College of Surgeons. He was for several years a member of the council of that College, and on one occasion was an unsuccessful candidate for the vice-presidency. He enjoyed a large surgical practice, and was consulting surgeon to the Rotunda Hospital and to the Coombe Hospital, as well as examiner for several life insurance societies. In social and professional life he was held in much affection, and his genial manner inspired trust in his patients and practitioners who consulted him. Mr. Heuston had been in failing health for many months past, and his death was, no doubt, accelerated by the announcement three months ago that a son was wounded and reported missing in the Dardanelles.

DARTMOOR NURSING ASSOCIATION.—The Prince of Wales has given £50 towards the initial expenses of providing nurses for two of the Dartmoor districts, and has promised an annual subscription for the same amount.

# The War.

## THE CASUALTY LIST.

THE following names of medical men appear among the casualties announced since our last issue:—

*Wounded.*

Lieutenant E. G. D. Milsom, R.A.M.C., attached to the 7th Gloucester Regiment.

Captain J. W. Wood, R.A.M.C., attached to the 4th Battalion Cameron Highlanders (T.F.).

Lieutenant L. J. Legris, R.A.M.C., attached to the 8th Battalion West Yorkshire Regiment (T.F.).

Captain J. V. L. Grant, attached to the Warwick Battery, R.H.A. (T.F.).

Captain H. W. White, R.A.M.C., attached to the 11th Liverpool Regiment.

Lieutenant H. M. Scott, R.A.M.C., attached to the Lincolnshire Fusiliers.

Surgeon Charles F. Schuler, R.N., Hawke Battalion, Mediterranean R.N. Division.

## DEATHS AMONG THE SONS OF MEDICAL MEN.

The following son of a medical man must be added to our lists of those who have fallen during the war:—

Private G. Dunn, The Buffs, fourth son of the late Dr. Dunn, of Wolverhampton.

## COÖRDINATION OF RECRUITING FOR MILITARY SERVICES AND THE NEEDS OF THE CIVILIAN POPULATION.

A letter has been addressed by the Central Medical War Committee to the honorary secretaries of the Local Committees as follows:—

SIR,—The Central Medical War Committee wishes to call the attention of the local Medical War Committees to an aspect of their work which, in the anxiety to secure medical officers for the army, has not perhaps received all the attention it deserves—namely, the duty of guarding, as far as possible, civilian interests while finding medical men for military service. The reference to the Central Committee is "to organise the medical profession in England and Wales in such a way as will enable the Government to use every medical practitioner fit to serve the country, in such a manner as to turn his qualifications to the best possible use and to deal with all matters affecting the medical profession arising in connexion with the war." This obviously throws on the Central Medical War Committee the duty of considering in all its aspects the organisation of the profession for the present needs of the country.

If we are to provide the army with a steady and sufficient supply of medical officers—our primary duty—we must arrange that the work of those who go is carried on in their absence. The interests of our colleagues demand this as well as the interests of the nation. Any unnecessary ground of complaint on the part of the civilian population occasioned in the process of obtaining the necessary supply of medical men for the army would obviously tend to prejudice recruiting and to make the work of local Medical War Committees throughout the country more difficult. Therefore in the interests of the men who have gone or are going, of their patients, of future recruiting, and of the country in general, it behoves us to conduct

our recruiting with careful regard to the needs of every locality.

The Central Medical War Committee has been in conference with various Government departments on this question, and particularly with the National Health Insurance Commissioners who are responsible to Parliament for the medical treatment of a very great proportion of the industrial population of the country. The Committee agrees with the opinion expressed by these bodies that, *taking the country generally*, there is an ample supply of doctors of military age to meet any demands that seem likely to be made on the profession in the immediate future. But these men are unequally distributed. Some are in areas never too well supplied with doctors at any time, in which the withdrawal of comparatively few might cause serious difficulties. Some are in areas where the proportion of doctors to the population is such that a large number could be spared with comparatively little inconvenience to the community. The task before the Central Medical War Committee is to so adjust the demands in each area as to convince both doctors and the general public that these demands are equitable. How is this to be done?

The Central Medical War Committee, in conjunction with the National Health Insurance Commissioners, is closely studying figures that have been worked out to show the proportion of doctors (and especially of general practitioners) to population in every area. It has, moreover, the advantage of a large amount of information received from callers and correspondents and through the Commissioners. But it feels it must rely very much on the activity, foresight, and local knowledge of the local Committees.

In answer to recent inquiries *re* the War Register, a great deal of valuable local information has been sent in, but the Central Medical War Committee is of opinion that the need of taking a comprehensive view of the medical needs of the area is not yet sufficiently before local Committees. This is shown by the fact that quite accidentally cases have come to our notice where really serious difficulties have arisen as regards attendance on the local population, as to which the means of information of the local Committees appears to have been defective, since they have neither acted themselves nor warned the Central Committee. Local Committees are, or should be, in possession of information as to the conditions in every part of their area, and it is imperative that careful consideration should at once be given by the local Committees to those districts in their area where there seems to be a risk that if further men be withdrawn there might be serious consequences to the community and to the doctors who are left. The Committee should not wait until mischief has actually occurred, but should act in time. This action, taken with a full sense of responsibility, should take the form of a careful consideration of the needs of each district and its capacity for releasing more doctors, assisting, where necessary, in working out any rearrangements of work among the remaining practitioners. The public must not be led to expect that in respect of medical attendance it is entitled to "business as usual." All sections of the public must be prepared to economise in this as in other directions. But the amount of sacrifice required of both public and the profession should both now, and as recruiting progresses, be kept as equal as possible throughout all districts of an area and throughout all areas of the country.

When a Committee has made this careful survey (which if not already made should be pushed through as rapidly as possible) if it finds there are any weak districts in its area it should at once warn the Central Medical War Committee that commissions should not be given to practitioners in the districts named without further consideration; and it should increase its pressure on the men of military age in those other districts, if any, which seem able to spare more doctors.

The needs of the various districts in its area and of every kind of practice should be considered by the local Committee, which should take advantage of all possible sources of reliable information as to the necessities of private practice which the members of the Committee will be able to furnish. Again, the Committee should be in close touch with the Panel Committees in its area; the secretaries or other representatives of such might very usefully be on the local Medical War Committee. The Panel Committee should in its turn be in equally close touch with the Insurance Committee. The local Medical War Committee should also be in touch with any body employing any considerable number of medical men such as institutions and hospitals.

On its part the Central Medical War Committee will make use of all information given to it by its local Committees and by central authorities, and will be in close touch with the Insurance Commissioners. It is believed that by such a local and general system of inquiry and intercommunication between Panel and local Medical War Committees there should be no danger of inequitable treatment of the doctors or population of any area.

The Committee wishes to state its conviction that such a system of safeguards need not, and in fact must not, prejudice the supply of medical men for the army. But since some areas will have to watch very jealously, and at once, the release of a few or even any men, other areas must be called upon to furnish much greater supplies than have hitherto been asked from them, and the local Committees are asked to believe that the demands on them will be made as judiciously as possible, with a due regard to their own advice as to the needs and capabilities of their areas, and with a careful study of what other parts of the country can do and are doing in the way of recruiting.

The Central Medical War Committee is well aware that in asking local Committees to deal at once with this aspect of the matter they are asking a great deal of bodies already burdened with considerable responsibilities. But a very great compliment has been paid to the profession in leaving, as the War Office and Lord Derby have done, the organisation of the profession for military purposes to a purely professional committee. The reputation of the profession for organising capacity and public spirit is at stake, and the Central Medical War Committee feels sure that the confidence of the authorities that these qualities would be shown by the profession will not be found to have been misplaced.—We are, Sir, yours faithfully,

ALFRED COX,
N. BISHOP HARMAN,
Secretaries, Central Medical War Committee.

429, Strand, London, W.C., Dec. 14th, 1915.

---

## MEDICAL STUDENTS AND RECRUITING CANVASSERS.

In reply to an inquiry by the honorary secretary of the University of London Students' Representative Council the following letter has been received from the War Office, under date Dec. 7th, signed

for the Director of Recruiting by Colonel R. J. Strachey:—

With reference to your letter of the 17th November, I am directed to inform you that students who at or before the close of the present winter session will be qualified for entry to one of the examinations for the third-year students in medicine and duly enter for the examination for which they are studying, will not be attested until after its conclusion, and if they are successful will be included in the class of fourth-year men under Lord Derby's scheme.

I am to point out that fourth- and fifth-year medical students should continue their studies, and should be advised to join the Medical Unit of their University Officers Training Corps. *They should be given a copy of this letter to show to the recruiting canvassers, who will indicate on their cards the reason for their not enlisting.*

We italicise the last sentence, which should be of help to medical students generally.

---

Colonel A. E. Garrod, A.M.S., has been appointed consulting physician to H.M.'s hospitals in Malta.

---

BRITISH RED CROSS SOCIETY AND THE ORDER OF ST. JOHN OF JERUSALEM.—At a meeting of the two societies at the Royal Automobile Club on Dec. 8th, presided over by the Hon. Arthur Stanley, M.P., contributions to "Our Day" amounting to £800,000 were announced, of which £371,502 came from overseas. Lord Lansdowne moved the thanks of the meeting to the Dominions for their splendid help to the Sick and Wounded Fund. Princess Christian acknowledged the devoted help of the workers, and Sir Frederick Treves spoke to the sympathy of the press, without whose coöperation the other work would have been in vain.—H.M. the Queen visited on Dec. 9th the Central Workrooms of the Red Cross Society at the Royal Academy, and expressed satisfaction at the output of 10,000 garments and surgical requisites in five weeks.—The British Red Cross Society has been promised an ambulance convoy of ten cars, costing £6000, by the Cannock Chase and Pelsall coalowners and miners' associations.

THE WELSH GENERAL HOSPITAL.—The personnel of this hospital, to be found by Wales, will include officers in charge of medical and surgical divisions who must be consultants in their branches, a registrar, ophthalmologist, ear and throat specialist, pathologist, and radiographer. A dental surgeon with a medical qualification would be accepted. The hospital is for overseas service and will be commanded by Lieutenant-Colonel A. W. Sheen, R.A.M.C. (T.F.). Particulars and forms of applications for posts can be obtained from the honorary secretaries, Welsh Hospitals, 47, Principality-buildings, Cardiff.

OUTPOSTS FOR RELIEF WORK IN FRANCE.—The second report of the War Victims' Relief Committee of the Society of Friends states that the work in France from February to October, 1915, was of four kinds—viz., medical, building, relief, and agriculture. On the medical staff there were two doctors, eight fully trained nurses, nine partly trained nurses and midwives, and two assistants, who were engaged at five centres of work—at Châlons-sur-Marne and Sermaize, hospitals; at Bettancourt a fine château had been lent and a convalescent home established for 50 children, which had proved a veritable godsend to the refugees in the towns and to many delicate children from Rheims; in the devastated villages in the departments of Marne and Meuse and at Bar-le-Duc, medical and district nursing. At Châlons the number of maternity patients had lessened very much since March, and an average of only ten babies had been born each month. A small ward containing eight cots has been devoted to the care of sick babies, and has proved an invaluable adjunct to the work of the Châlons Civil Hospital, which has been over-full. The dormitories and refectory in which a crèche was established last winter continue to be filled. At the present time the building work to be done in France seems likely to diminish unless some new area should be opened. In the same way the agricultural work has been largely accomplished, now that a whole year has elapsed since the destruction of battle passed over the Marne Valley. Warm appreciation of the Society of Friends' beneficent work, which means far more than the mere relief of material suffering, has been expressed officially and also by touching gifts in kind from those who can ill spare anything in their poverty. Personal friendship and sympathy have sprung up between the workers and those whom they are seeking to help. One of the workers writes: "With people like this all we can do is wor h while. Even were the Germans to return and burn all our huts to the ground but a small part of our work would be destroyed."

SCIENCE AND THE HEALTH OF ARMIES.—The ninety-seventh chapter of the *Times* History and Encyclopædia of the War bears this title and commences with a general vindication of science in recent military experience, going on to give detailed examples. Among these are included the prevention of tetanus by preventive inoculation, the drainage of wounds on the principles laid down by Sir Almroth Wright, the preventive vaccination against the typhoid group, and the work done in bilharziosis. These matters are described in simple and attractive language, freely interspersed with illustrations. Portraits appear of Sir Almroth Wright (on the cover), Professor Metchnikoff, Lord Moulton, Sir William Leishman, and Dr. Strong, the director of the American Sanitary Red Cross Commission. The illustrations show the methods of dealing with the fly pest, the preparation of horse serum, methods of disinfection of clothes, the steps in antityphoid vaccination, and many other matters, the subjects being drawn from Germany as well as the various allied countries.

FEDERATED MALAY STATES HOSPITAL.—A hospital for sick and wounded soldiers has been established at Blackmore End, Kimpton, Herts, lent for the purpose by Mrs. Vincent, of Blackmore End and 35, Portman-square, London. The funds to cover the cost of the equipment and maintenance of the hospital to be known as the Federated Malay States Hospital, have been provided by the public of the Federated Malay States, all classes of the community, Malay, Chinese, and Indian, as well as European, having contributed liberally. The hospital contains 80 beds, and is under the charge of Captain G. D. Freer, R.A.M.C. (T.), formerly senior medical officer, Selangor, Federated Malay States. Mr. C. S. Atkin is resident medical officer, and Miss E. M. Willis, of the Royal Free Hospital, Gray's Inn-road, London, is matron. The first 48 patients arrived at the hospital from France on Dec. 3rd.

CASE-RECORD CARDS FOR MILITARY CASES AT HEALTH RESORTS.—The advisory committee of the Section of Balneology and Climatology of the Royal Society of Medicine has issued a second impression of case-record cards for recording the treatment of wounded and invalid soldiers at the British health resorts. It is the aim of the committee to obtain a permanent record of the many military cases that are now being treated by waters, baths, and climates in this country. The card was prepared in consultation with the Medical Research Committee, and will eventually form a part of the records for the medical history of the war. It is hoped that all medical men in charge of soldiers at the health resorts should avail themselves of this means of making their observations of permanent value. Supplies of cards can be obtained on application to the printers, Messrs. Adlard, 75, Newgate-street, E.C.

GAZETTE OF THE THIRD LONDON GENERAL HOSPITAL.—This excellently conducted little paper provides a fund of wholesome humour as Christmas fare for its readers. The contents include the usual amusing contribution from Major Sparks, and a Christmas romance, "including no fewer than five attempted murders, countless baffling mysteries, a ghost, and a wedding," all comprised within the space of three pages, illustrations included. The profits from the sale of the *Gazette* (the price of which is 4*d.* post free) are added to the Benevolent Fund of the 3rd London General Hospital, Wandsworth.

NEW HOSPITALS AND WARDS.—A hospital for officers has been opened at 6, Grosvenor-place, S.W., a house lent by Sir George Albu for the period of the war. The hospital is managed by a committee and supported by voluntary contributions.—Lady Monro opened on Dec. 11th a new ward of the Northwood V.A.D. Hospital, presented by Mr. T. M. McAlpine.

# OBITUARY OF THE WAR.

## ARTHUR KELLAS, M.B., CH.B., D.P.H. ABERD.,
MAJOR, ROYAL ARMY MEDICAL CORPS.

Major A. Kellas, who was killed in the Near East on August 6th at the age of 31, was the youngest son of Mr. James F. Kellas, superintendent of the Mercantile at Aberdeen. He was educated at Aberdeen University, where he took his M.B., Ch.B. in 1906 and D.P.H. in 1907. For a short time he was resident physician and surgeon at the Royal Hospital for Sick Children, Aberdeen, and at the end of 1907 was appointed junior assistant physician to the Royal Asylum, Aberdeen, and promoted senior assistant a few months later. This post he held until he was called up for service with his unit at the outbreak of war. His commanding officer writes of him: "To everyone in the ambulance he had endeared himself by his excellent qualities of head and heart, by his devotion to duty, and by his keen interest in everything that pertained to the good of the ambulance as a whole. ..... Among a group of excellent officers I regarded him as outstanding. ..... He had a great capacity for work, was an excellent organiser, with a firm grasp of detail, of cool and sane judgment, and a high sense of discipline which was an outstanding example to all." The medical superintendent of the asylum at which he worked states that his loss is very deeply felt by a large circle of friends, and especially at the Aberdeen Royal Asylum, where he was universally respected and beloved.

## MAURICE MACKENZIE, M.R.C.S., L.R.C.P. LOND.,
LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant M. Mackenzie, who was reported killed in France on Nov. 28th at the age of 28, was the youngest son of the late Sir Stephen Mackenzie and of Lady Mackenzie, of "The Croft," Dorking, and a nephew of the late Sir Morell Mackenzie. He was educated at Elstree, Repton, and the London Hospital, where after winning a prize in clinical medicine he qualified in 1912 and held the appointments of house surgeon, house physician, and receiving room officer, and showed promise of every success in his profession. He will also be remembered there for his share in organising and performing in the Christmas entertainments. On the outbreak of war he joined the Red Cross and with his friend, Captain H. W. Kaye, R.A.M.C., organised a hospital at Château Laversine, which was placed at the disposal of the British Red Cross Society by Baron Robert de Rothschild. A large number of French and British wounded were treated there until the advance to the Aisne caused the hospital to be evacuated. Kaye and Mackenzie then came home and joined the Royal Army Medical Corps. They were posted to the 43rd Field Ambulance, and after training at Aldershot went with the ambulance to France in April. Here Lieutenant Mackenzie made himself loved and valued during a dangerous and difficult time. In August he became attached as medical officer to the 2nd Royal Irish Rifles, and was with them in the trenches in the attack of Sept. 25th, and up to the time of his death, which occurred while attending to a wounded man under fire. His commanding officer writes of him to Lady Mackenzie: "Your son was a great favourite and a cheerful companion, with a very high sense of duty. We lose a great friend and I and the battalion lose an ideal medical officer." The friend with whom he worked wrote of him in August: "We cannot serve with him for any time without realising how admirably suited he is by temperament, and indeed in every way, for active service. To my mind he is just the type of man who is the backbone of our army out here, high praise you will say, but I mean it. No one could wish for a more loyal and trustworthy man to work with." And again after his death: "All the officers and men I spoke to were more than fond of him and feel his loss intensely."

## FRANCIS SHINGLETON SMITH, B.A., B.C. CANTAB., M.R.C.S., L.R.C.P. LOND.,
CAPTAIN, INDIAN MEDICAL SERVICE.

Captain F. Shingleton Smith, whose death occurred in action near Bagdad between Nov. 22nd and 24th at the age of 36, was the youngest son of Dr. R. Shingleton Smith, of Clifton, consulting physician to the Bristol Royal Infirmary. He left Clifton College in 1898 and went to King's College, Cambridge, where he took his arts degree, returning to Bristol to do his hospital work at the Royal Infirmary. After taking B.C. Cantab. and M.R.C.S., L.R.C.P. in 1906 he became house surgeon at the Weston-super-Mare Hospital. A year later he passed for the Indian Medical Service, being raised to captain's rank in July, 1910. Three years later he became attached to the 120th Rajputana Infantry. His thesis for the Cambridge degree was written on tropical maladies, and in India he soon became specially interested in the mosquito. He had personal knowledge of some 30 different sorts of anopheles, culex, &c., and found in the Persian Gulf that they mostly differed from those he had known in India, and were intermediate between them and the Egyptian varieties. He was much interested in the fauna of Mesopotamia, and always seems to have been on the look out for opportunities to add to his knowledge; even when home on leave he spent much time in London doing pathological and other work at the Greenwich Hospital and various post-graduate centres. He was always an interesting personality, and took an original point of view on most subjects, which made him a very pleasant companion. He was at one time deeply interested in criminology. Six months ago he acquired otorrhœa after diving for rifles dropped by Indian troops while swimming across a creek in the Tigris. Later he developed sand-fly fever and had to go to hospital at Kurna, and from thence to Bombay; after a month's leave he had recovered his good health and returned to his regiment at Belgaum. His last letter was written on a transport near Kut-el-Amara on the Tigris shortly before going into action near Bagdad. He will be missed by a large circle of friends in Clifton.

JOHN CUNNINGHAM BELL, M.R.C.S., L.R.C.P. LOND.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant J. C. Bell, who died from dysentery at Alexandria on Nov 22nd at the age of 39, was the eldest son of Mr. George Bell, of 15, Vanbrugh Park-road, Blackheath. He studied medicine at University College, London, qualifying M.R.C.S., L.R.C.P. in 1900, and then settled at West Coker, near Yeovil, where he succeeded in working up a good practice. He held the appointments of Poor-law medical officer and public vaccinator for the district, and was elected to represent his colleagues on the National Insurance Medical Service Committee, whilst he also found time for such recreations as shooting, tennis, and motor cycling. One of his colleagues writes: "Quite early in the war Bell expressed his readiness to join the Royal Army Medical Corps, but as he was carrying on an essentially country practice (his nearest colleague being over three miles distant) it was difficult for him to make the necessary arrangements to get away. When the chance offered in August last he at once applied for a commission and was accepted. Many of his patients were sorely distressed at the thought of losing his services, for although of a somewhat brusque manner he had a genial disposition, and he was much beloved and trusted by them. Both they and his former colleagues deeply lament the loss to themselves and the profession."

ALEXANDER AITKEN ROSS, M.B., C.M. EDIN.,

LIEUTENANT-COLONEL, ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel A. A. Ross, who died in a London Red Cross Hospital for Officers on Nov. 24th at the age of 54, was the second son of the late Lieutenant-Colonel A. A Ross, of the Leicestershire Regiment. He was born at the Curragh Camp, Ireland, and was educated at Watson's College, Edinburgh. Graduating M.B., C.M. at the University of Edinburgh in 1893, he acquired a large practice on the south side of the city, and was very popular as a medical man alike for his professional abilities and his personal charm. Associated for many years with the Volunteer and Territorial services, he had been since 1908 commanding the 3rd Lowland Field Ambulance. At the outbreak of the war, although his time had almost expired, he willingly consented to have it extended. He went with his unit to Stirling for training, and in June of this year was ordered to the Dardanelles. Under the strain his health gave way, his heart becoming affected; he was invalided to Malta in October, and thence reached Southampton on Nov. 20th in a very weak condition. He passed peacefully away four days later, the news being received with regret by a wide circle of friends. The funeral took place with full military honours on Nov. 27th at Newington Cemetery, Edinburgh. Lieutenant-Colonel Ross married in 1913 a grand-daughter of the late John Edge, M.D., F.R.C.S., of Exeter.

FRANCIS JOSEPH WISELY, B.A. R.U.I., M.B., B.CH. BELF.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant F. J. Wisely, who died on Sept. 14th from wounds received whilst attending to the sick and wounded at the Dardanelles on Sept. 1st, was the second son of the late Mr. James Wisely, of Ravenhill-road, Belfast. He was educated at Clongowes Wood College, Royal University, and Queen's College, Belfast. He was a distinguished student and secured a scholarship in botany and zoology. He took his degree in arts and medicine, and after qualifying in 1911 held the posts of house physician and house surgeon at the Mater Hospital, Belfast. He was then appointed assistant medical officer of the Worcester County and City Asylum, resigning his position to take a commission in the Royal Army Medical Corps. While at the University he was in the Officers Training Corps. The medical superintendent of the asylum writes of him: "As assistant medical officer he was bright, energetic, and cheerful. As a colleague he was loyal and upright, and quick and reliable in any emergency. His breezy personality made itself felt, and one was the better for his presence. He was a general favourite both with staff and patients."

# Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council of the College on Dec. 9th a report was read from the Board of Examiners in Anatomy and Physiology for the Fellowship, stating that at the recent examination 34 candidates were examined, and of these 9 were approved and 25 rejected. A report was received from the Court of Examiners respecting candidates for the diploma of Fellow; it stated that 23 candidates presented themselves and that 7 of these acquitted themselves satisfactorily. It was resolved that diplomas of Fellowship should be granted to these successful candidates. It was resolved that the Dalhousie University, Nova Scotia, the University of Toronto, and Queen's University, Kingston, Ontario, should be added to the list of universities, whose graduates in medicine and surgery may present themselves for examination for the Fellowship without first becoming Members of the College. It was also resolved to grant licences in dental surgery to 30 successful candidates. The best thanks of the Council were given to Sir Henry Morris for his report to the Council of the proceedings of the General Medical Council at their recent session. Permission was given to Professor Arthur Keith to give a course of 20 demonstrations on the anatomy of the body treated from the point of view of first-aid work, six of these lectures being recognised as Hunterian lectures and three as Arnott demonstrations. The previous demonstrations have been much appreciated by many engaged on first-aid work and by privates in the Royal Army Medical Corps. A report was read from the secretary of the proceedings at the recent annual meeting of Fellows and Members. The report was received and entered on the minutes.

The diploma of Fellow was conferred upon the following seven candidates who were successful at the recent Final Fellowship Examination, for which 23 candidates presented themselves:—

David John Harries, M.D., B.S. Lond., L.R.C.P., M.R.C.S., University College, Cardiff, and University College Hospital; Arthur Tudor Evans, M.A., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and Middlesex Hospital; Arthur Hughes Southam, M.Ch., M.B., M.A. Oxon., L.R.C.P., M.R.C.S., Oxford University, St. Bartholomew's Hospital, and Manchester University; Arthur Chance, M.D. Dub., F.R.C.S. Irel., L.R.C.P., M.R.C.S., Dublin University and St. Bartholomew's Hospital; William Hugh Cowie Romanis, B.A. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Thomas's Hospital; Reginald Harold Bridge, M.B., Ch.M. Sydney, Sydney University and St. Bartholomew's Hospital; and Michael George O'Malley, M.B., B.Ch., B.A.O., National University, Ireland, University College, Dublin, and St. Bartholomew's and Middlesex Hospitals.

The Licence in Dental Surgery was conferred upon the following 31 candidates who have passed the requisite examinations and complied with the necessary by-laws:—

Douglas Albert Raoul Aufranc, Middlesex and National Dental Hospitals; Henry Walter Breese, Middlesex and Royal Dental Hospitals; James Frank Cowell, Liverpool University; Herbert Ronald Cullwick, Birmingham University; William John Curtis, Middlesex and Royal Dental Hospitals; George Dee, Guy's Hospital; Arnold Thomas Densham and Edmund Percy Deverall, Guy's Hospital; Harold Foulkes, Liverpool University; Sante Freni-Sterrantino, Bologna University and Royal Dental Hospital; George Henry Charlesworth Harding, Liverpool University; William Samuel Hazell, Bristol University; Maurice George Henry, Guy's Hospital; Godfrey Macdona Hick, James Henry Markham, and Hendrik Christoffel Marais, Middlesex and Royal Dental Hospitals; Cyril Randell Martin, Guy's Hospital; Harihar Gangadhar Moghe, Bombay University and National Dental Hospital; John Lisle Mugford, Guy's Hospital; Cecil Murray-Shirreff, Bristol University; Arthur Llewellyn Newman, John Durrell Pank, and Maurice Oliver Simpson, Middlesex and Royal Dental Hospitals; William Henry Barton Stride, Bristol University; Joseph Gilbert Wade Sutcliffe, Leeds University; Graham McKim Thomas and Harry Laurence Thorn, Guy's Hospital; Eleanor Cannell Watterson, National Dental and Royal Free Hospitals; Roger Gilbert Wilshere, Guy's Hospital; George Rodney Winter, Middlesex and Royal Dental Hospitals; and Alfred Ernest Young, Bristol University.

UNIVERSITY OF LIVERPOOL.—At examinations held recently the following candidates were successful:—

*Diploma in Ophthalmic Surgery.*—R. P. Ratnakar, L.M.S. Bombay.

*Diploma in Tropical Medicine.*—G. H. Pearson, M.B., Ch.B., and J. Wood, M.B., Ch.B.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 39 cases were considered. One applicant was elected to an annuity of £20 and £273 granted to 23 cases, and the others were either postponed for further inquiries or found unsuitable. The following is a summary of the cases relieved:—

Daughter, aged 27, of L.R.C.P. Irel. who practised in Ireland. Applicant had nursed her mother, who had died recently, through a long and serious illness, and required a change and rest. Mother's income, derived from charities, ceased at her death. Voted £3 to enable her to take a holiday.—Widow, aged 57, of M.D. Glasg. who practised at Glasgow, and died in 1907. Only certain income £7 per annum. Son who helped to keep the home going had joined the army. Applicant endeavoured to make a living by taking lodgers, but this had not been a success of late. The Glasgow branch of the Guild reported very favourably of this case. Voted £10.—Widow, aged 62, of M.D. Dub. who practised at Elgin, and died in 1904. Husband prior to his death was for some years an annuitant of the Fund. Applicant left totally unprovided for, and obtained post as manageress of boarding-house in London, but owing to the war the house has been closed, and she is now out of work. Has one son who is a permanent invalid. Voted £12 in 12 instalments.—Widow, aged 51, of M.D. Dub. who practised at Widnes, Lancs., and died in August, 1915. Applicant had been separated from husband for some years owing to his habits. Was left totally unprovided for at his death. Is an invalid and has lost the sight of one eye. Has two daughters, aged 22 and 9, and one son, aged 16. The eldest daughter is a nurse. Applicant has a home temporarily provided by friends. Voted £10 in two instalments.—Daughter, aged 68, of M.R.C.S. Eng. who practised at Cambridge and Cheltenham and died in 1887. For some years has just managed to earn a living by keeping a boarding-house at Westcliff, but owing to the war has not had any visitors, and has had to sell her home to provide rent and other expenses. Only income £35 per annum. Voted £12 in 12 instalments.—Daughter, aged 65, of M.D. Edin. who practised at Spalding, and died in 1894. Has only a very small permanent income, and relatives who have helped her in the past are now unable to do so. Voted £12 in 12 instalments and referred to the Guild.—Daughter, aged 64, of M.D. Edin. who practised at Newark-on-Trent. Applicant lives in own house, which is heavily mortgaged, and the little investment she has is not paying dividends owing to the war. Has a lady boarding with her who only pays a nominal amount. Voted £10 and referred to the Guild.—Daughter, aged 22, of M.B., C.M. Aberd. who practised at Methlick, and died in 1909. Mother of applicant died this year. The applicant is the eldest of six children, the three youngest of whom are at school. Of the other two, one boy, aged 19, has joined the army, and the elder is a clerk earning £1 per week. Only permanent income £27 10s. per annum. Applicant is desirous of keeping the home together. Voted £10 in two instalments, and referred to the Guild.—Widow, aged 50, of M.R.C.S. Eng. who practised at Bexhill-on-Sea, and died in 1912. Was left unprovided for with two daughters, now aged 20 and 11. The eldest earns about £1 per week as a clerk. The applicant's health very bad, and quite unable to undertake any employment. Relieved three times, £30. Voted £10 in two instalments.—Widow, aged 52, of M.D. Edin. who practised at Newcastle-on-Tyne. At husband's death left unprovided for. Has one daughter now aged 26, who is married and only able to help her mother slightly. Applicant recently fractured her leg and is still unable to do anything. Relieved once, £12. Voted £12 in 12 instalments.—Widow, aged 68, of L.R.C.P. & S. Edin. who practised at Cardiff. Only income two small pensions from other charities. Has two sons, both married, and now in the army and unable to help. Applicant's health bad. Relieved 10 times, £87. Voted £6 in 12 instalments.—Daughters, aged 61 and 63, of M.R.C.S. Eng. who practised at Bexley Heath. Joint income from needlework and friends less than £30 per year. Both have very bad health. Relieved 11 times, £174. Voted £20 in 12 instalments.—Daughter, aged 56, of M.R.C.S. Eng. who died in 1893, and practised at Liverpool. Lives with brother and sister both of whom, like the applicant, are through ill-health only able to earn very little. An uncle pays the rent of the house. Relieved six times, £68. Voted £12 in 12 instalments.—Widow, aged 70, of M.D. Edin. who practised at Ross, in Herefordshire, and died in 1908. Applicant's income from all sources £35. Tries to supplement this by taking an occasional boarder, but too old to do much in this way. Relieved five times, £36. Voted £12 in 12 instalments.—Widow, aged 78, of M.D. Lond. who practised in London, and died in 1895. Applicant's only income £40 per annum from two charities. Suffers severely from rheumatism, and unable to do anything. Relieved eight times, £45. Voted £10 in two instalments.—Daughter, aged 64, of F.R.C.S. Eng. who practised at Chester, and died in 1884. Has been able to earn a living as housekeeper until about three years ago. Since owing to age she has not been successful in obtaining a post and is in great financial distress. Relieved three times, £22. Voted £10 in two instalments.—Daughters, aged 56 and 64, of M.R.C.S. Eng. who practised in Cornwall. Applicants endeavour to make a living by taking in paying guests, but have not been successful, and they both have very indifferent health. Live in own house but unable to make ends meet. Relieved six times, £100. Voted £18 in 12 instalments.—Widow, aged 57, of L.R.C.S. Edin. who practised at Langley, and died in 1909. Applicant lives in own house but it is heavily mortgaged. Endeavours to earn a living by taking in paying guests, but has not had sufficient of late to pay her way. Relieved five times, £50. Voted £10 in two instalments.—Daughter, aged 82, of M.R.C.S. Eng. who practised at Newton Abbot, and died in 1839. Only income a small Post Office Annuity provided by friends. Has recently lost a source of income which has left her in great difficulties. Voted £20 in four instalments.—Daughter, aged 61, of L.S.A. who practised in Staffordshire, and died in 1856. Applicant suffers from spinal curvature and very bad sight, and quite unable to do anything. Only income £25 per annum from relatives. Relieved 15 times, £170. Voted £ 8 in 12 instalments.—Widow, aged 48, of F.R.C.S. Eng. who practised in London, and died in 1901. Applicant left with three young children. The eldest has now joined the army, the second son is a clerk, and the youngest a pupil teacher without salary. Applicant managed fairly well by taking in boarders at an Essex seaside place, but since the war has scarcely had any. Relieved five times, £59, some years ago. Voted £12 in 12 instalments.—Widow, aged 77, of M.R.C.S. Eng. who practised at Holderness, and died in 1896. Only certain income £30 per annum. Six children, four of whom are married and unable to help, and the two single children only able to help very little. Relieved five times, £60. Voted £12 in 12 instalments.—Widow, aged 67, of L.R.C.P. & S. Glasg. who practised in Essex, and died in 1896. Applicant was left quite unprovided for. Only income a pension of £30 from another charity. Only son married with five children and unable to help. Relieved four times, £30. Voted £12 in 12 instalments.

The claims of the Fund are steadily increasing, largely in consequence of the war, and although the ordinary subscriptions remain at much the same level, there is a constantly increasing adverse balance. To meet this the committee has had to draw heavily upon its limited reserves, and unless increased support be rapidly forthcoming the work of the Fund will have to be very seriously curtailed. Subscriptions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

A DEVONSHIRE CENTENARIAN.—Mrs. Eliza Dart, of Uffculme, near Tiverton, has recently died in her 102nd year.

AN Admiralty announcement contains official intimation that the *Mauretania*, the sister ship to the *Lusitania*, is being used as a hospital ship.

SEWAGE DISPOSAL AT EXETER.—The sanitary committee has recommended a scheme to the Exeter city council for the improvement of the sewage disposal works of the city, at an estimated cost of £10,000.

THE Ulster Volunteer Hospital Christmas Book is artistically designed, and intended to hang upon the wall, the front page bearing a calendar for the year. The book, which measures 9 by 11 inches, contains some portraits (including one of the King), views of the hospital, descriptive letterpress, and extracts from authors.

A DOMESTIC ECONOMY EXHIBITION.—Under the auspices of the Institute of Hygiene, Devonshire-street, London, W., an exhibition representing domestic economy will be held from Jan. 17th to 22nd, 1916. The scope of the exhibition is wide, for it will deal with economy in coal, gas, oil, and electricity, as well as in clothing. In the cooking section practical demonstrations will be given, new dishes shown, simple recipes illustrated, and the hay-box in various forms exhibited.

LIVINGSTONE COLLEGE.—The annual report for the past year was adopted at a meeting of the members held at the College at Leyton on Nov. 29th. The report points out that shortly before the Easter vacation the urgent call for medical men to help in the war so depleted the staff that it was decided to close the College. The War Office then accepted the College as a hospital, and it has been used for the reception of wounded soldiers since the beginning of

August. Until after the war the Year Book of the College, which usually appears in January, will be discontinued.

MILK AND INSANITARY SURROUNDINGS.—At the last meeting of the Paul urban district council (Cornwall) the medical officer of health, Dr. H. Russell Phillips, stated that one of the milkshops he had visited was a menace to the public health of the district. The milk was kept in a room where washing and other domestic work was performed, and where the children were in such a filthy condition that the local police had suggested the intervention of the National Society for the Prevention of Cruelty to Children. The council decided to take proceedings.

# Parliamentary Intelligence.

## HOUSE OF COMMONS.

WEDNESDAY, DEC. 8TH.

*Frost-bite at the Front.*

Sir G. SCOTT ROBERTSON asked the Under Secretary for War whether he had any recent information concerning frost-bite, so-called, amongst our troops at the front; did it threaten to be as bad as it was last year; was it more or less common amongst our men than amongst French and Belgian soldiers; did French and Belgian soldiers wear puttees; were rubber thigh boots provided in sufficient numbers for actual duty in the trenches; and, if so, were they worn with puttees or with long woollen stockings.—Mr. TENNANT replied: I understand that during the week ended Nov. 27th there were approximately 770 cases of trench-foot reported from France. It is hoped that the measures adopted will cause a great reduction in the incidence of this ailment. I cannot say whether frost-bite is more common among our soldiers than among French or Belgian soldiers. Rubber thigh-boots have been provided in large quantities for the use of men actually on duty in the trenches, and still further quantities are being sent. As far as is known, puttees are being worn with them.

*Dentists in the Army.*

Sir C. KINLOCH-COOKE asked the Under Secretary for War whether, in view of the importance both to officers and men at the front of having their teeth properly attended to, he could see his way to appoint a certain number of consulting surgeon dentists and so ensure the greater efficiency of the army.—Mr. TENNANT answered: I assume that the honourable gentleman is referring to the troops in France and the Mediterranean and not to the troops at home, and I may inform him that a considerable number of full-time dental officers have already been appointed over and above such as may have been appointed to go with the Canadian contingent and the Australian and New Zealand forces and any voluntary hospitals. Any more that may be asked for will be sent and they can be used either as consultants or as executive officers as the authorities may decide.

Sir C. KINLOCH-COOKE: Is the right honourable gentleman aware that a number of officers and men are now suffering from a complaint of the jaw which could have been obviated had there been a sufficient number of dentists on the spot?—Mr. TENNANT: No, I am amazed to hear that statement from the honourable gentleman, because we have had not only a sufficient but a surplus number of dental surgeons who are ready to go at any time that they are required.

Sir C. KINLOCH-COOKE asked the right honourable gentleman whether he was aware of the increasing number of men invalided home from the front on account of teeth; that there were eight Red Cross hospitals in France without a dentist; and whether, in view of the necessity of maintaining the army in a constant state of efficiency, he would consider the advisability of making arrangements for a larger number of dentists to accompany the troops.—Mr. TENNANT said in reply: There is no evidence of any increased number of soldiers being invalided for defective teeth in proportion to the numbers of men in the field. I am not aware whether eight Red Cross hospitals in France are without a dentist, but the honourable Member may accept my assurance that all demands for dental surgeons made by the authorities oversea have been met.

Sir C. KINLOCH-COOKE further asked the right honourable gentleman whether he was aware that men invalided home from the front for teeth had often to remain in this country a much longer time than would be necessary owing to insufficient dental arrangements at the various hospitals; that at one of the temporary hospitals in the London district 75 men were still waiting to have their teeth attended to; and whether it was possible to employ a larger draft of dentists, or at any rate to see that men were not kept waiting for dental operations to the detriment of their general health.—Mr. TENNANT answered: I have no knowledge in the sense of the first two parts of this question. Men are not kept in hospital for dental treatment, but the bulk of the work is done whilst the men are at their duties. In each command a number of full-time commissioned dental officers has been appointed and these are being added to as required, and the general officers commanding are also empowered to employ as many civilian dentists as there is need for. I may add that the importance of proper dental treatment of officers and soldiers is fully realised.

*Diseases connected with Picric Acid.*

Replying to Mr. W. THORNE, Mr. BRACE (Under Secretary for the Home Department) said: The only diseases normally attributable to processes in the manufacture of, or involving the use of, picric acid are eczematous ulceration of the skin and poisoning by nitrous fumes. Both of them are scheduled under the Workmen's Compensation Act.

*Varnish Fumes in Aeroplane Manufacture.*

Mr. ROWLANDS asked the Under Secretary for the Home Department whether, having regard to the number of deaths from the fumes of tetrachlorethane in connexion with varnish used in aeroplane manufacture, the Home Office would have a strict code of rules drawn up under which the work must be carried on.—Mr. BRACE replied: The Home Office has a very strict code of rules in operation. The trouble is that employers are unable to get the necessary machinery for ventilating purposes, in addition to which buildings that were not suitable before have had to be transformed and that has caused great difficulty. I can assure the House that the Home Office is exhausting all its available means to put an end to the difficulty.

THURSDAY, DEC. 9TH.

*Medical Benefit Regulations.*

Mr. BUTCHER asked the representative of the National Insurance Commissioners whether his attention had been called to the circular (No. 201 I.C.) issued by the National Insurance Commissioners in September, 1914, stating in effect that, in view of the number of panel practitioners serving abroad on active service or engaged in other exceptional duties in the public interest and the impracticability of adequate prior consultation with, or notice to, them, there would be no substantial revision of the medical benefit regulations during the war; whether he was aware that Sir Robert Morant wrote on March 17th, 1915, to the secretary of the British Medical Association stating that changes in the medical benefit regulations were mooted and discussed some three or four months before they came into effect; whether draft new regulations involving changes of a substantial character in the existing medical benefit regulations were issued on or about Oct. 27th, 1915, to come into force on Jan. 1st, 1916, some of which were never discussed with or communicated to large numbers of practitioners and of local Medical and Panel Committees prior to their issue; whether he was aware that the effect thereof was to leave panel practitioners little more than a fortnight to decide whether they would remain on the panel or not on the new terms; and whether, in view of the above-mentioned circular of September, 1914, and the letter of March 17th, 1915, the Commissioners would withdraw these regulations so far as they affected the panel practitioners.—Mr. C. ROBERTS answered: Yes; I am familiar with the documents referred to, which do not bear the construction placed upon them in the question. As regards the third part of the question, proposals as to the conditions of service of medical practitioners for 1916 had been under consideration by representatives of the medical profession for a very considerable period prior to the publication of the draft regulations. Every local Medical and Panel Committee in the country was consulted by those representatives, and the regulations were drafted in the light of the opinions thus elicited. The position is therefore not as suggested in the fourth part of the question, and the answer to the fifth part is in the negative.

Mr. BUTCHER: Were some of these regulations communicated to the practitioners before they were issued to the public?—Mr. ROBERTS: I think they were all communicated. There are two points, the question of rubber stamps and the repetition of prescriptions, on which the regulations were not so fully communicated to the representatives. If the honourable and learned gentleman refers to those, as there appears to be a general misconception, I shall be very glad to have a talk with him on that subject.

*The Drug Tariff.*

Mr. BOOTH asked the representative of the National Insurance Commissioners whether he intended to force his new proposals upon the Scottish chemists; whether he had received intimations of a strike on the part of the latter; and whether he was pursuing this conflict at the request of the Scottish Commissioners or of some body domiciled in England.

Mr. PRINGLE also asked the honourable gentleman whether before refusing the offer of Scottish chemists to continue during 1916 the arrangements for national health insurance dispensing in Scotland he consulted the Scottish Insurance Commissioners and Insurance Committees; and, if so, whether the advice they gave was accepted.—Mr. C. ROBERTS answered: The representatives of insurance committees on the Scottish Advisory Committee were consulted before the terms of service of chemists for 1916 were formulated. It would not be conducive to good administration that I should give details of advice tendered to me by my department prior to the adoption of a policy for which I am responsible to the House. As regards the acceptance by chemists of the terms of service for 1916, the position remains as stated in my reply to the honourable Member for Leith burghs on Dec. 2nd. I listen to the advice tendered to me by my department, but I cannot give any information as to what that advice is.

Mr. PRINGLE: Will the honourable gentleman say whether the Scottish Commissioners were not appointed to supervise the administration of the Act in Scotland and what is the use of these Commissioners if their advice is not to be taken on a matter of this importance?—Mr. ROBERTS: In administrative questions of this kind the Scottish Commissioners tender advice and the policy I adopt is the policy for which I am responsible to the House.

Mr. PRINGLE: Have they been asked for advice?—Mr. ROBERTS: Yes, and I received their advice.

Mr. PRINGLE asked the honourable member whether he proposed that the many millions of prescriptions issued in England during 1916 should be priced by Insurance Committees twice over by different methods; whether it was suggested that for this purpose there should be established 12 checking bureaux in England similar to the checking bureau established in Glasgow for the whole of Scotland; whether the cost of this double checking for England was estimated to exceed £80,000 per annum; and whether he would reconsider the desirability of such an expenditure at this time.—Mr. ROBERTS replied: The answer to the first part of the question is in the negative. A reorganisation of the present arrangements in England has been necessitated by the transference under the new system introduced for 1916 of the duties of pricing prescriptions from individual chemists to Insurance Committees and schemes for coöperative action are at present in course of preparation by English Insurance Committees, with a view to securing the maximum degree of economy in the discharge of those duties. The cost of the necessary operations, which differ materially from those conducted by the Scottish organisation alluded to, is not expected to entail on balance any additional expenditure, and could in no circumstances possibly approach the sum mentioned in the question.

Mr. PRINGLE: Has the honourable gentleman endeavoured to make an estimate based on the experience of the Scottish chemists?—Mr. ROBERTS: The work is quite different. It would not help in the least. As I understand the claims of the Scottish chemists, they are for a higher rate of remuneration than they have received up to the present time.

*Scottish and Irish Insurance Commissioners.*

Mr. BOOTH asked the Chancellor of the Exchequer whether any witness and, if so, who had given evidence before the Retrenchment Committee of the Treasury upon the question of the services of the Scottish or the Irish Insurance Commissioners; and whether it was proposed to call the chairmen of these two authorities and other persons familiar with the working difficulties of the Insurance Act.—Mr. MCKENNA replied: No witness has given evidence on this question. It will be for the Committee to decide what witnesses to call when they meet again, though I have no doubt they will call the chairmen of the two commissions referred to before proposing any radical alterations in the administration of the Insurance Act in Scotland or in Ireland.

Mr. BOOTH: Has any evidence been tendered either by document or in person on this subject?—Mr. MCKENNA: No, I do not think any evidence has been tendered. The subject has been mentioned, but I do not think evidence was taken.

Mr. BOOTH: Has not a memorandum been received from Sir Matthew Nathan with regard to Ireland?—Mr. MCKENNA: It has not come before the Committee yet.

Mr. PRINGLE: When is it proposed that the Committee should go on with its work?—Mr. MCKENNA: At as early a date as possible.

*Eyesight of Recruits.*

Sir J. ROLLESTON asked the Under Secretary for War whether he was aware that the uncertainty which arose owing to recruits not being thoroughly medically examined for eyesight and other defects upon attestation was putting the recruits and employers in difficulty as to what steps they should take to provide substitutes in public offices and private businesses and involving employers and recruits in unnecessary expense and difficulty; and whether he could see his way to give directions that either a recruit or an employer should be entitled to demand a final medical examination at once, so that it might be finally determined whether the recruit was fit for military service or not.—Mr. TENNANT wrote in reply: When the present recruiting campaign is over it will be possible to examine recruits properly. Notice will be given with regard to the arrangements.

*Sterilised Tuberculous Meat.*

Mr. FIELD asked the President of the Local Government Board whether he was aware that in continental countries slightly tuberculised meat was sterilised and sold at a low price; and whether, in view of existing conditions, he would consider the advisability of avoiding the wasteful destruction of food and adopt the economical method practised with safety in other places.—Mr. LONG answered: I am aware of the continental practice referred to, but I do not consider that it would be expedient to adopt it in this country at the present time.

MONDAY, DEC. 13TH.

*Medical Students.*

Mr. PRINGLE asked the Under Secretary for War whether senior medical students were being employed in military hospitals as surgical dressers and medical clerks; and whether their services in these capacities would be taken into account as hospital attendance for the purpose of their medical qualification.—Mr. TENNANT answered: I am informed that medical students are not being employed by the War Office as surgical dressers or medical clerks in military hospitals.

*American Medical Men and the British Army.*

Mr. PRINGLE asked the Under Secretary for War whether American medical men had been recruited for medical service with the British Army; and, if so, what were their conditions of service.—Mr. TENNANT said in reply: I understand that several of the American universities have combined under the auspices of the Red Cross Society to send medical men and nurses to form the staff of two general hospitals. These men and nurses are engaged in their civilian capacity. Individual American medical men are not being employed in a military capacity.

TUESDAY, DEC. 14TH.

*Reports on Military Hospital Work.*

Mr. PRINGLE asked the Under Secretary for War whether facilities had been refused for the publication in the journals of the medical profession in this country of medical communications or reports of medical societies regarding military hospital work in France.—Mr. TENNANT answered: I am informed that it is not the case that facilities such as those described in the question have been refused.

*The Royal Army Medical Corps.*

Mr. PRINGLE asked the Under Secretary for War what was the proportion of regular officers of the Royal Army Medical Corps to officers formerly in civilian practice who had enlisted since the beginning of the war.—Mr. TENNANT said in reply: The strength of regular officers is 1084, and that of temporary officers 5894. This is exclusive of the Special Reserve and Territorial Force.

WEDNESDAY, DEC. 15TH.

*Scottish Chemists and the Drug Tariff.*

Mr. HOGGE asked the representative of the National Insurance Commissioners what arrangement had been made with the Scottish chemists to avoid insured persons in Scotland being deprived of medicines after Dec. 31st.—Mr. C. ROBERTS replied: The necessity of maintaining the supply of drugs, medicines, and appliances to insured persons in Scotland during 1916 has been the governing consideration in all negotiations on this subject. As a result of further representations made on behalf of chemists on the panel in Scotland, I have been enabled to authorise Scottish Insurance Committees to offer terms of service for 1916 to chemists in each area which are designed to safeguard the interest of the Exchequer so far as is possible under war conditions, and will, I have every reason to hope, secure the continuance of the chemists' service during the forthcoming year.

## BOOKS, ETC., RECEIVED.

BELL, G., AND SONS, London. CENTURY COMPANY, New York.

A Laboratory Outline of Elementary Chemistry. By Alexander Smith, B.Sc. Edin. Price 2*s.* net.

A Text-book of Elementary Chemistry. By Alexander Smith, B.Sc. Edin. Price 5*s.* net.

BLACK, A. AND C., London.

The Structure of the Fowl. By O. Charnock Bradley, M.D., D.Sc. M.R.C.V.S., Principal of the Royal (Dick) Veterinary College, Edinburgh. Price 3*s.* 6*d.* net.

CHURCHILL, J. AND A., London.
Southall's Organic Materia Medica. Eighth edition, revised and enlarged By E. W. Mann, B.Sc. Lond., F.I.C. Price 7s. 6d.
An Introduction to the Physics and Chemistry of Colloids. By Emil Hatschek. Second edition. Price 3s. net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.
Handbook of Massage for Beginners. By L. L. Despard. Price 6s. net.
Diseases of the Throat, Nose, and Ear. By William H. Kelson, M.D., B.S., F.R.C.S. Eng., Surgeon to the London Throat Hospital. Price 8s. 6d. net.
Instinct and Intelligence. By N. C. Macnamara, F.R.C.S. Price 6s. net.
A System of Medicine by Eminent Authorities in Great Britain, the United States, and the Continent. Edited by Sir William Osler, Bart., M.D., F.R.S. Assisted by Thomas McCrae, M.D., F.R.C.P. Lond. Price per single volume, 35s. net; set of five volumes, £7 15s. Second edition, thoroughly revised.

LAURIE, T. WERNER, London.
The Real Oscar Wilde. By Robert Harborough Sherard. Price 12s. 6d. net.

LEWIS AND CO., H. K., London.
Amnesia and Analgesia in Parturition (Twilight Sleep). By Alfred M. Hellman, B.A., M.D., F.A.C.S., Adjunct Attending Gynæcologist and Obstetrician, Lebanon Hospital. Price 6s. 6d. net.

LONGMANS, GREEN, AND CO., London.
The Theory of Valency. By J. Newton Friend, D.Sc. Birm., Ph.D. Würz., F.I.C. Second edition, revised. Price 5s. net.
The Positive Sciences of the Ancient Hindus. By Brajendranath Seal, M.A., Ph.D. Price 12s. 6d. net.

MURRAY, JOHN, London.
Rural Sanitation in the Tropics. By Malcolm Watson, M.D., C.M., D.P.H. Price 12s. net.

UNIVERSITY PRESS, Cambridge.
Morphology and Anthropology. A Handbook for Students. By W. L. H. Duckworth, M.A., M.D., Sc.D. Second edition. Vol. I. Price 10s. 6d. net.

WRIGHT, JOHN, Bristol.
First Aid to the Injured and Sick: An Advanced Ambulance Handbook. By Major F. W. Warwick, R.A.M.C. (T.), and Major A. C. Tunstall, R.A.M.C. (T.). Ninth edition, revised. Price 1s. net. Questions on the same, 6d. net.

# Appointments.

*Successful applicants for vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

DRUMMOND, W. B., M.B., C.M. Edin., has been appointed Resident Medical Superintendent of Baldovan Certified Institution for the Treatment and Education of the Feeble-minded, Dundee.

GOTELEE, HUGH EVELYN, L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed temporary Medical Officer and Public Vaccinator for the Kingsteignton District by the Newton Abbot Board of Guardians, Devon.

GRANT, PETER NAPIER, M.B., C.M. Glasg., has been appointed Surgeon to the Out-patient Department for Diseases of the Throat and Nose at the Royal Infirmary, Glasgow.

GRAVES, A. J., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Cleator District of the county of Cumberland.

GREEVES, R. AFFLECK, M.B., B.S Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal London Ophthalmic Hospital (Moorfields).

SUTHERLAND, ROBERT, M.B., Ch.B. Vict., has been appointed Acting Deputy Medical Officer of Health for Chard (Somerset).

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*
*When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.*

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £3 3s. per week, with board, lodging, and laundry.

BIRKENHEAD, BOROUGH HOSPITAL.—Junior House Surgeon. Salary £180 per annum, with board and laundry.

BIRMINGHAM CITY EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £300 per annum.

BIRMINGHAM CITY FEVER HOSPITAL.—Female Resident Medical Officer. Salary £250 per annum, with board.

BOLTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £230 per annum, with apartments, board, and attendance.

BRISTOL ROYAL INFIRMARY.—House Physicians and House Surgeons. Salary at rate of £120 per annum, with board, apartments, and laundry.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Second House Surgeon. Salary £150 per annum, with board, apartments, and laundry.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—House Physician and Casualty Officer. Salary £200 per annum, with board, residence, &c.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Female Resident Medical Officer for six months. Salary £200 per annum.

EAST HAM COUNTY BOROUGH EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £300 per annum.

EXETER, WESSEX FIELD AMBULANCE, R.A.M.C. (T.F.).—Commissions.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Two House Surgeons for six months. Salary at rate of £60 per annum, with washing allowance, board, and residence.

LEEDS PUBLIC DISPENSARY.—Female Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

MANCHESTER, ANCOATS HOSPITAL.—House Surgeon. Salary £100 per annum, £10 per month war bonus, with board, lodging, and washing. Also House Physician. Salary £80 per annum, £10 per month war bonus, with board, lodging, and washing. Also Two Unqualified Residents. Salary £20 per annum, with board, lodging, and washing.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon Salary £250 per annum, with apartments, attendance, &c.

MELBOURNE, VICTORIA, AUSTRALIA.—Officer in Control of Institution for Preparation of Vaccines and Antitoxins. Salary £650 per annum.

METROPOLITAN ASYLUMS BOARD, THE DOWNS SANATORIUM.—Assistant Medical Officer, unmarried. Salary £250 per annum, with usual residential allowances.

NEWCASTLE-UPON-TYNE. ROYAL VICTORIA INFIRMARY.—Assistant Resident Medical Officer. Salary £100 per annum, and lodging allowance of 30s. per week.

NORWICH POOR-LAW INFIRMARY.—Female Resident Medical Officer. Salary 5 guineas weekly, with flat, servant, &c.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer Salary £150 per annum, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

ROYAL EYE HOSPITAL, Southwark, S.E.—House Surgeon. Salary at rate of £150 per annum.

ST. MARYLEBONE INFIRMARY, St. Charles-square, North Kensington.—Two Temporary Assistant Medical Officers. Comfortable quarters.

ST. PANCRAS DISPENSARY, 39, Oakley-square, N.W.—Hon. Physician. Also Resident Medical Officer, unmarried. Salary £300 per annum, with residence and attendance.

SHEFFIELD ROYAL INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board and residence. Also Resident Surgical Officer. Salary £140 per annum, with board, residence, &c.

SHREWSBURY DISPENSARY.—Medical Practitioner to look after Patients of Medical Officer serving with the Army.

TRING, HERTS, 3/1ST HOME COUNTIES FIELD AMBULANCE, R.A.M.C., Halton Camp West.—Medical Officers for Foreign Service.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £250 per annum, with board, residence, &c.

TUNBRIDGE WELLS, 2/1ST EAST LANCASHIRE FIELD AMBULANCE, Linden Gardens.—Medical Officers.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Female House Surgeon. Salary £150 per annum, with board, apartments, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Bala, in the county of Merioneth; at Horsmonden, in the county of Kent; and at Leadhills, in the county of Lanark.

# Births, Marriages, and Deaths.

## BIRTHS.

BLETCHLY.—On Dec. 10th, at Hazelwood, Nailsworth, Gloucestershire, the wife of George Playne Bletchly, M.B. Lond., of a son.

DALLY.—On Dec 13th, at 19, Upper Wimpole-street, W., the wife of J. F. Halls Dally, M.A., M.D. Cantab., M.R.C.P., of a son.

DUNN.—On Dec. 6th, at Beaufort House, Bath, the wife of Lieutenant T. W. Newton Dunn, M.D., R.A.M.C., of a son.

LITLER-JONES.—On Dec. 12th, at Rodney-street, Liverpool, the wife of Major T. C. Litler-Jones, R.A.M.C., of a son

SHEPHERD.—On Nov 27th, at Merton House, Ross, Herefordshire, the wife of Thos. Scott Shepherd, M.B., F.R.C.S., of a daughter.

STACK.—On Dec. 7th, at "Arvalee," Clifton, Bristol, the wife of B. H. B. Stack, Captain, R.A.M.C. (T.), of a son.

## MARRIAGES.

BATT—GELSTON.—On Dec. 13th, at St. Mary's, Ixworth, John Dorrington Batt, Lieutenant, R.A.M.C., to Olive Edyth, elder daughter of Dr and Mrs. J. Seymour Gelston.

HADDON—OWEN.—On Dec. 7th, at All Saints, Battersea Park, Captain D. A. Ross Haddon R.A.M.C., attached 9th Battalion (Highlanders) Royal Scots, to Gwendolen Helen, daughter of Mr. and Mrs. Arthur Owen, of Overstrand Mansions, S.W.

LLOYD TUCKEY—MARSLAND.—On Dec. 7th, at St. Peter's Church, Eastbourne, Charles Lloyd Tuckey, M.D. Aberd., to Beatrice Mary, only daughter of the late Robert Wood Marsland, of Kew, Surrey, and Mrs. Marsland, of Ingarsby, Eastbourne.

MCCARTHY—PARNELL.—On Dec. 8th, at St. George's Cathedral, Southwark, Lieutenant Owen Felix McCarthy, R.A.M.C., to Philippa Dorothy, only daughter of Mr. and Mrs. E. Parnell, of Wickham-road, St. John's, S.E.

## DEATHS.

HERON.—On Dec. 6th, at Jermyn-street, S.W., George Allan Heron, M.D. Glasg., F.R.C.P. Lond., in his 71st year.

RAYNER.—On Dec. 9th, at Dunsmure-road, Stamford-hill, John Alexander Rayner, B.A. Lond., M.R.C.S., late of Kingsland-road, aged 70 years.

STEEVES.—On Dec. 11th, in a nursing home, George Walter Steeves, B.A., M.D. Brux., of Cavendish-square, W.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## HEALTH OF BRITISH HONDURAS.

ACCORDING to the Blue-book of this colony for the year 1914, just published, the health of the general population was good. There was a serious outbreak of bubonic plague in the neighbouring port of New Orleans, but, thanks largely to the vigorous measures adopted by the authorities there, no case reached the colony. A rat campaign was carried out at the joint cost of the Government and the Town Board of Belize, but no traces of plague bacilli were found in any of the rats examined. There was an alarm of yellow fever at Payo Obispo, but on investigation it proved to be a case of remittent fever. Inquiries were made into the prevalence of ankylostomiasis and revealed that it is very frequent among the Indian population in the Toledo district and also in parts of the district of Orange Walk, the principal causes assigned being ignorance of the most rudimentary laws of sanitation and hygiene. It is anticipated that further investigations will be made in the near future on behalf of the Rockefeller Foundation, who propose to send a commission to inquire as to the best methods of coping with this insidious disease. The estimated mean population of the colony for the year was 41,543 (20,848 males and 20,695 females). The birth-rate was 42 and the mortality 28·139 per 1000 of the estimated mean population. The number of illegitimate births was 686 out of a total of 1796, or 38 per cent. During 1914 the excess of female over male births was 38, and of male over female deaths 88. The daily average number of patients under treatment and care in Belize Hospital was 44·78, in Corozal Hospital 7·22, in Orange Walk Hospital 8·27, in Stann Creek Hospital 6·14, in Punta Gorda Hospital 7·4, and in Belize Lunatic Asylum 67·39. The rainfall in 1914 was 97·755 inches. The average for the ten years 1905–14 was 95·80 inches, the maximum (130·93 inches) being in 1911, and the minimum (63·76 inches) in 1910. The number of days on which rain fell in 1914 was 152, as compared with an average for the last ten years of 121. The highest shade temperature was 88° F. in September, and the lowest 61° in November and January.

## CHARAS.

*To the Editor of* THE LANCET.

SIR,—I note a paragraph from one of your India correspondents in THE LANCET of Nov. 27th (p. 1210) respecting "Charas," a pernicious drug, the consumption of which is on the increase. I do not know if your readers are aware that "Charas," "Churrus," or "Cherras" is the East Indian name of the resin which exudes from the Indian hemp (Cannabis indica). I extract from Lindley's "Vegetable Kingdom" (1847) the following:—

> The vegetable fibre called hemp, produced by Cannabis sativa, which is hardly less celebrated for its narcotic qualities. In the elegant language of Endlicher, "Emollitum exhilarat animum, impotentibus desideriis tristem stultam, lætitam provocat et jucundissima somniorum conciliat phantasmata." The Turks employ it under the names of Hadschy and Malach. Linnaeus speaks of its vis narcotica, phantastica, dementens, anodyna, et repellens. Even the Hottentots use it to get drunk with, and call it Dacha. The Arabians name it Hasish. The Brazilian savages delight in its use. It appears to owe its narcotic properties to the presence of a resin which is not formed in Europe. This resin exudes in India from the leaves, slender branches, and flowers; when collected into masses it is the *Churras* or *Cherris* of Nepal. Its odour is fragrant and narcotic, its taste slightly warm, bitterish, and acrid.

Other names used for it or the Cannabis indica are Bhang and Ganja. Charras must not be confused with Chara, another plant quite distinct.

I am, Sir, yours faithfully,

Dec. 10th, 1915. BOTANICUS.

## AN ARTISTIC ALMANAC

WE have received from Messrs. Abdulla and Co., Limited, London (cigarette manufacturers), a copy of an artistic almanac for 1916, of which 20,000 copies are being sold for the benefit of the funds of the British Red Cross Society—and it is hoped that at least £1000 will be realised for the funds. The price of the almanac is fixed at one shilling. It is a wall calendar, the pages of which measure 16 by 12 inches, giving space for the month's calendar, and a reproduction in black and white or in colours of a picture by some well-known artist. Three of the paintings were exhibited this year at the Royal Academy—viz., those by Mr. J. Shaw Crompton, Mr. Charles Dixon, and Mr. Tristram Ellis. Other reproductions are by Mr. Frank Dadd, Mr. Maurice Grieffenhagen, Mr. W. Hatherell, Mr. A. S. Hattrick, Mr. Arthur Hopkins, Mr. William Logsdail, Mr. Frank A. Mason, Mr. Frank Reynolds, and Mr. W. J. Wainwright. The reproductions and the style and finish of the work are excellent.

## IMMEDIATE FIRST AID AT THE SEAT OF WAR.

IN THE LANCET of July 17th (p. 158) we called attention to a useful four-page leaflet which Major Maclure, V.D., has distributed among the men in the trenches, probably saving thereby many lives. Short and clear instructions are given therein for rendering first aid for the accidents likely to occur in the fighting line, and on the front page is an anatomical diagram showing the more important places to appiy pressure. Copies of the leaflet have been issued to 300 regiments at the front, as well as to the troops in Gallipoli, South, East, and West Africa, and the Cameroons. The free distribution of these leaflets deserves encouragement. Major Maclure will thankfully acknowledge donations, which may be sent to him at 26, Dennington Park-road, West Hampstead, N.W.

## TUBERCULOSIS IN THE TONGAN ISLANDS.

A REPORT by Mr. H. E. W. Grant, C.M.G., on the Tongan Islands Protectorate for the year ended March 31st, 1915, has been received at the Colonial Office. These islands are situated in the Southern Pacific to the E.S.E. of Fiji and 390 miles therefrom, and have an area of 385 square miles. Mr. Grant states that a matter which is causing grave concern and engaging the serious attention of the Tongan Government and of the medical department is the rapid growth of tuberculosis throughout the Protectorate. The chief medical officer, Dr. H. M. Cowan, has opened in Nukualofa an educational campaign on the subject, and it is proposed to establish classes for the instruction of the native clergy in order that they may be able to take up the matter in connexion with their pastoral work; the services of those engaged in teaching in the schools will also be enlisted.

The estimated population of the islands on Dec. 31st, 1914, was 23,121, of whom less than 400 claim British nationality. The birth-rate last year was 34·60 per 1000 and the death-rate 27·29 per 1000. A hospital, in charge of a European doctor, is maintained in each of the islands of Tongatabu, Haabi, and Vavau. Tongan subjects receive free medical treatment. Each hospital is provided with male and female wards, a dispensary, an operating theatre, and store-rooms. Native houses have been erected in the hospital compounds for isolation cases. Native medical students are trained at the hospitals for the purpose of serving as dispensers in the outlying islands and in the districts not easily accessible to the medical officers. Dispensaries have been established at Mua (in Tongatabu) and in the islands of Eua, Niuafoou, and Niuatobutabu. The maximum temperature for the year recorded at Tonga College, Nukualofa, was 92·5° F. in January and the minimum 40° in June and August. The total rainfall was 97·36 inches.

It was not until Sept. 4th, 1914, that the wholly unexpected news that Great Britain was at war reached Nukualofa. Prior to that date no communication had reached from beyond the group since July 28th. The only mail steamers calling at Tongan ports are those of the Union Steamship Company of New Zealand. These ceased to arrive when due, but by no one was it conjectured that the interruption in the service was owing to the existence of a state of war.

---

*The National Doll League.*—Most people by this time are familiar with the "Unconscious Doll Exerciser," a doll whose arms are formed of spiral springs which the child can lengthen at will. The profits on the sale of this doll, which would make a suitable Christmas present, are to be given to the British Red Cross and Order of St. John of Jerusalem. Further particulars can be obtained from the organising secretary of the League, 64, Regent-street, W.

*W. D. J.*—The Central Medical War Committee is acting centrally and through local Committees in England and Wales. The secretary of the Irish Medical War Committee is Mr. M. R. J. Hayes, 35, Upper Fitzwilliam-street, Dublin.

*Pro Patria.*—We agree with our correspondent, and the particular method of economy which he proposes has been advocated in our columns.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

# Medical Diary for the ensuing Week.

## SOCIETIES.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY.—4.30 P.M., Cases sent for Consultation. Demonstration of Pathological Specimens. Clinical Cases will be shown by Dr. J. L. Bunch, Dr. M. Dockrell, Dr. W. Griffith, Dr. W. K. Sibley, Dr. C. R. Kempster, and Mr. C. H. Mills. 5.30 P.M., Paper:—Dr. P. White: Some New Forms of Occupational Dermatitis.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Bradshaw Lecture:—Surgeon-General Sir Anthony A. Bowlby, K.C.M.G.: Wounds in War.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham); Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. C. H. Hayton). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. C. H. Hayton). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients (Dr. H. W. Barber). 5.30 P.M., Eye Operations (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles) Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

*For further particulars of above Lectures, &c., see Advertisement Pages.*

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager." We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

### ALTERATION OF INLAND SUBSCRIPTION RATES.

OWING to the alteration in the Inland Newspaper Postal rate, the postage on each copy of THE LANCET will in future be 1*d.*, and sometimes 1½*d.*

The revised Inland Subscription rates are:—

| | | | |
|---|---|---|---|
| One Year ... ... ... ... | £1 | 3 | 3 |
| Six Months ... ... ... ... | 0 | 13 | 8 |
| Three Months ... ... ... ... | 0 | 7 | 0 |

The rates for the Colonies and Abroad (thin paper edition) will be as usual:—

| | | | |
|---|---|---|---|
| One Year ... ... ... ... | £1 | 5 | 0 |
| Six Months ... ... ... ... | 0 | 14 | 0 |
| Three Months ... ... ... ... | 0 | 7 | 0 |

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

### TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

### NEWSPAPERS FOR NEUTRAL COUNTRIES.

THE Secretary of the War Office has issued the following order:—

The public are informed that on and after Saturday, November 6th, newspapers, magazines, books, and other printed publications (other than trade circulars) will not be sent forward to neutral European countries unless posted direct from the office of publishers or newsagents who have obtained permission from the War Office for this purpose. Persons desiring to send newspapers, &c., to neutral European countries should, therefore, give their orders for execution to publishers or newsagents who have obtained such permission.

The Publisher of THE LANCET has obtained the required permission of the War Office, and he will forward copies direct from the Office to any neutral country on receipt of instructions.

### METEOROLOGICAL READINGS.

*(Taken daily at 9.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Dec. 15th, 1915.

| Date. | Barometer reduced to Sea Level and 32° F | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Dec. 9 | 29·770 | E. | ... | 56 | 55 | 37 | 39 | 39 | Foggy |
| ,, 10 | 29·336 | S.W. | 0·65 | 75 | 57 | 39 | 55 | 55 | Raining |
| ,, 11 | 29·342 | W. | 0·19 | 66 | 51 | 47 | 46 | 47 | Overcast |
| ,, 12 | 29·620 | W. | ... | 44 | 37 | 35 | 34 | 36 | Cloudy |
| ,, 13 | 30·210 | S.W. | ... | 53 | 39 | 32 | 31 | 32 | Overcast |
| ,, 14 | 30·280 | S.W. | ... | 47 | 47 | 32 | 36 | 37 | Overcast |
| ,, 15 | 29·670 | S.W. | 0·47 | 49 | 47 | 37 | 43 | 44 | Raining |

## Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. R J. Albery, Lond.; Aberdeen University Union, Secretary of; Australian Book Co., Lond., Manager of; Army Medical Service, Lond.. Director-General of; Sir Thomas Clifford Allbutt, Cambridge; Captain W. B. Ainger, R.A.M.C., France; Messrs. Armour and Co., Lond.; Messrs. E. G. Allen and Co., Lond.; Dr. R. W. Allen, Lond.

B.—Miss E. D. Brewer, Lond.; Sir John Bland-Sutton, Lond.; Sir James Barr, Liverpool; Messrs. Burroughs Wellcome and Co., Lond.; Messrs. J. Bale, Sons, and Danielsson, Lond.; Mr. T. Benham, Lond.; Berry White Medical School, Dibrugarh, India, Superintendent of; The British Drug Houses, Lond.; Colonel S. H. Browne, I.M.S., Lond.; British Organo-Therapy Co., Lond., Secretary of; Lieutenant-Colonel R. J. Blackham, R.A.M.C., France; Messrs. Butterworth and Co., Lond.; Surgeon - Probationer W. T. Beswick, R.N.V.R., Lond.; Birmingham Corporation Public Health Department, Medical Officer of Health to the; Bedford County Hospital, Secretary of; Sir Hugh Beevor, Bart., Attleborough; Mrs. Braithwaite, Leeds; Captain R. W. Brimacombe, R.A.M.C., Tunbridge Wells; Mr. H. Bloxsome, Fairford; Mr. B. Baker, Birmingham; Messrs. C. Birchall, Liverpool; Messrs. W. H. Bailey and Son, Lond.; Birmingham City Education Committee, Secretary of; Dr. E. M. Brockbank, Manchester; Bolton Infirmary and Dispensary, Secretary of.

C.—Dr. B. Cohen, Plymouth; Messrs. Cargills, Glasgow; Dr. W. J. Cox, Lond.; Captain J. G. Cooke, R.A.M.C., France; China Inland Mission, Lond.; Miss Ethel Calkin, Lond.; Chicago School of Sanitary Instruction; Mr. G. H. Holt, Aberdeen; Mrs. E. Kitson Clark, Leeds; Messrs. Cadbury Bros., Birmingham; Lieutenant F. G. Crookshank, R.A.M.C., France; Messrs. E. Cook and Co., Lond.; Dr. J. T. Callcott, Harrogate; Messrs. Cowie and Co., Lond.; Messrs. Carnrick and Co., Lond.; Casein, Ltd., Lond.; Mr. John H. Costain, Liverpool.

D.—Sir H. Bryan Donkin, Lond.; Major C. D. Dawes, I.M.S., Lond.; David Lewis Colony, Alderley Edge, Director of; Dr. Thomas Dutton, Lond.; Dr. S Davies, Woolwich; Denver Chemical Manufacturing Co., Lond.; Dr. A. Distaso, Cardiff; Dr. Clement Dukes, Rugby.

E.—Dr. H. Elliot-Blake, Beer; Eucryl, Ltd., Lond.; Eugenics Education Society, Lond.; East Ham Education Committee, Secretary of; Dr. H. G. Earle, Hong-Kong; Messrs. Elders and Fyffes, Lond.; 21st East Lancashire Field Ambulance, Tunbridge Wells, Officer in Charge of.

F.—Dr. T. Gregory Foster, Lond.; Fédération des Syndicats d'Initiative de la Cote d'Azur, Nice; Dr. George Foy, Dublin; Mrs. Hay Forbes, Swindon; Fellow's Medical Manufacturing Co., New York; Factories, Chief Inspector of, Lond.; Mrs. Finlay, Innellan; Dr. R. Scott Frew, Glasgow; Dr. R. Fortescue Fox, Lond.

G.—Dr. W. T. Gardner, Bournemouth; Dr. W. Gordon, Exeter; General Medical Council, Lond., Acting Registrar of; Guest Hospital, Dudley, Secretary of.

H.—Mr. P. J. Hartog, Lond.; Sir Frederick Hogg, K.C.I.E., Lond.; H. M. D.; Colonel M. P. Holt, A.M.S., Lond.; Major C. H. Hopkins, R.A.M.C., Devizes; Dr. A. J. Hesterlow, Negapatam, India; Mr. B. Hormasji, Bombay; Dr. G. H. Henderson, Offord; Mr. Edmund Hughes, Liverpool; Dr. I. Harris, Liverpool; H. E. C. K. M.; Mrs. Honeyburne, Manchester; Messrs. C. J. Hewlett and Son, Lond.; Messrs. Hachette and Co., Lond.; Mr. P. Harper, Lond.; Messrs. C. Hearson and Co., Lond.; Dr. W. Harris, Lond.

I.—India Office, Lond.; Islington Infirmary, Lond., Steward of; Insurance Committee for the County of London, Clerk of.

J.—Mr. T. R. Judson, Reigate; Dr. G. P. Jerome, Sutton Coldfield; Dr. J. Johnstone, Shettleston; Messrs. W. Judd, Lond.

K.—Messrs. H. S. King and Co., Lond.; Professor Dr. M. Kiutsi, Hakodate; King Edward VII.'s Hospital, Cardiff, Secretary of; Messrs. Kamming and Co., Hong-Kong; Surgeon W. H. King R.N., Deal.

L.—Dr. E. W. Lewis, Southport; Messrs. E. and S. Livingstone, Edinburgh; London Temperance Nurses' Co-operation, Secretary of; Local Government Board, Lond., Secretary of; The Lawrence Patent Water Softener and Sterilizer Co., Lond.; London School of Massage, Secretary of, Leeds Public Dispensary, Secretary of; Messrs. Luzac and Co., Lond.; Messrs. H. K. Lewis and Co., Lond.; Dr G. F. Longbotham, Middlesbrough; Dr. W. J. Lawrie, Ayr; Mrs. Liston, Edinburgh; London Dermatological Society.

M.—Mental After-care Association, Lond., Assistant Secretary of; Mr. John Furse McMillan, Sandown; Dr. Charles Mercier, Parkstone; Mersea Island Fishermen's Co-operative Society, Manager of; Medical Supply Association, Lond., Manager of; Maruzen Co., Tokyo; Mr. J. E. May, Lond.; Mr. W. Vincent Morgan, Narberth; Mr. A. C. McAllister, Lond.; Messrs. Macmillan and Co., Lond.; M. G.; Messrs. J. Menzies and Co., Glasgow; Dr. J. F. H. Morgan, Brighton; Mr. C. Mansell-Moullin, Lond.; Dr. F. H. Marson, Stafford; Manchester Clerical, Medical, &c., Association; Metropolitan Hospital Sunday Fund, Lond., Secretary of; Medical Research Committee, Lond., Secretary of; Dr. F. W. Mott, Lond.

N.—National Health Insurance Commission (England), Lond.; Dr. J. T. C. Nash, Norwich; Mr. F. Newland-Pedley, Bandol; Norwich Guardians, Clerk to the; *Newsagent and Bookseller's Review*, Lond., Editor of.

O.—Sir William Osler, Bart., Oxford; Mrs. O'Meara, Luton; Rear-Admiral J. Oguri, I.J.N., Lond.

P.—Mr. T. Davies Pryce, Nottingham; Mrs. Pott, Epsom; Mr. E. Pellaux, Lond.; Preston Royal Infirmary, Secretary of; Messrs. Parke, Davis, and Co., Lond.; Pneumosan Co., Lond.; Messrs. Philip, Son, and Nephew, Liverpool.

Q.—Queen Alexandra Sanatorium, Davos Platz, Secretary to.

R.—Royal Society of Arts, Lond.; Major J. W. F. Rait, I.M.S., Bombay; Royal College of Surgeons of England, President and Council of; Mr. R. H. Randall, Lond.; Dr. Henry Rundle, Southsea; Royal National Hospital for Consumption for Ireland, Dublin, Secretary of; Mr. R. Ram, Glasgow; Mr. W. M. Roocroft, Wigan; Royal Victoria Infirmary, Newcastle-on-Tyne, Secretary of; Royal South Hants and Southampton Hospital, Secretary of; Lieutenant W. R. Reith, R.A.M.C., Cosham.

S.—Sanitary Publishing Co., Lond.; Captain J. M. Skinner, I.M.S., Bombay; Mrs. Stewart, Lond.; Mr. S. G. Shattock, Lond.; Messrs. Squire and Sons, Lond.; Mr. W. Savage, Bursiem; Messrs. Smith, Elder, and Co., Lond.; Messrs. Smith and Co., Lond.; Messrs. G. Street and Co., Lond.; Captain J. L. Sen, I.M.S., France; South African Institute for Medical Research, Johannesburg, Librarian of; Dr. D. Stone, Lond.; Captain T. H. Scott, R.A.M.C., France; *Shrewsbury Chronicle*, Proprietor of; Sheffield Royal Infirmary, Secretary of; Mr. D. M. Shaw, Lond.

T.—Mr. J. Thin, Edinburgh; Dr. C. E. Thornton, Manchester; Tunbridge Wells General Hospital, Secretary of; T. G. F.

V.—Messrs. Van Houten, Lond.; Dr. H. Walter Verdon, Lond.; Dr. C. Vennens, Lond.; Veterinary Director-General, Ottawa.

W.—Mr. S. Wormull, Lond.; Dr. A. L. Wolbarst, New York; Dr. E. W. Ainley Walker, Oxford; Dr. Clifford White, Lond.; Lieutenant-Colonel G. Sims Woodhead, R.A.M.C.(T.); Messrs. Wright and Co., Aston, Birmingham; Messrs. Wills, Lond.; Dr. J. A. Wilson, Warrington; Messrs. Wright and Sons, Bristol; Captain A J. Whitehorne-Cole, France; Wessex Division Medical Services, Exeter, Assistant Director of; Lieutenant Adam White, R.A.M.C.(T.); Dr. J. C. McWalter, Dublin.

## Letters, each with enclosure, are also acknowledged from—

A.—Dr. W. F. Annand, Coventry; Dr. G. Arthur, West Ealing; Captain A. Abrahams, Aldershot; Ardath Tobacco Co., Lond.; A. D. W.; A. C.; A. D.; A. H. C.; Dr. J. Aikman, Guernsey; Mr. J. E. Adams, Lond.; Dr. W. Attlee, Eton; A. G. R. N.

B.—Dr. A. E. Boycott, Radlett; Mr. C. J. Bond, Leicester; Borax Consolidated, Ltd., Lond.; Dr. W. Bainbridge, Makerston; Dr. G. M. Blair, Lond.; Messrs. F. P. Baker and Co., Lond.; Messrs. Burgoyne, Burbidges, and Co., Lond.; Sir Lauder Brunton, Bart., Lond.; Mr. E. J. Burrow, Cheltenham; Dr. H. P. Berry, Grantham; Dr. R. A. Bickersteth, Liverpool; Dr. J. Black, Rotherfield; Mr. W. J. Best, Louth; Mr. J. W. Bell, Lond.; Blackburn, &c., Infirmary, Secretary of; Birkenhead Borough Hospital, Treasurer to the; Dr. C. R. Box, Lond.; Fleet-Surgeon A. R. Bankart, R.N., Lond.

C.—Dr. R. H. P. Crawfurd, Lond.; Sir A. Crichett, Bart., Lond.; Dr. A. E. Carver, Torquay; Mr. F. S. Cooper, Lond.; Mr. E. T. Collins, Lond.; Professor J. Mitchell Clarke, Bristol; Mrs. L. Colebrook, Lond.; Dr. H. J. Cardew, Chorley Wood; Messrs. Clarke, Son, and Platt, Lond.; Dr. A. Caddy, Calcutta; Mr. F. J. Cruise, Baltinglass; Mr. D. Carter, Bristol; Messrs. Claye and Son, Stockport; Mr. E. Collins, Sawbridgeworth.

D.—Dr. C. Dwyer, Dublin; *Dorset County Chronicle*, Dorchester, Proprietors of; Messrs. Darley, Cumberland, and Co., Lond; Messrs. Deacon and Co., Lond.; Dewsbury Education Committee, Secretary of; Miss I. Dexter, Lond.; Dr. W. Duff, Wishaw; Mr. M Duggan, Altrincham; Dr. G. H. G. Dundas, Ramsgate; Dr. J. F. H. Dally, Lond.; Messrs. W Dawson and Sons, Lond.; Dr. G. Dickson, Elgin.

E.—Mr. G. J. Evans, Bedford.

F.—Fry's Metal Foundry, Lond.; Mr. J. Gay French, Lond.; Dr. A. O. M. Fehrsen, Potgeitersrust; Mr J. Fredericks, Hayes; Mr. W Falla, Jersey; Messrs. H. Frowde and Hodder and Stoughton, Lond.; Dr. F. Fowler, Westbourne.

G.—Mr. D. M. Greig, Dundee; Dr. S. Gill, Formby; Messrs. Grimwade Ridley and Co., Lond.; Mr. W. Gilliat, Lond.; Dr. C. E. Glascott, Budleigh Salterton; Messrs. W. and A. Gilbey, Lond.; Mr. H. Bellamy Gardner, Lond. Mr. A. G. Goodwin, Liverpool; Mr. T. J. Gerrard, Chelmsford; Mrs. Janet Gillies, Basdale; Messrs. Grindlay and Co., Lond.; Mr. S. Greig, Edinburgh; Lieutenant-Colonel J. W. Grant, Brighton; Greenock, &c., Combination Board, Chamberlain of; Messrs. Grace Brothers and Co., Lond.; Mr. H. Gilford, Reading.

H.—Dr. W. Harmens Weybridge; Colonel Victor Horsley, A.M.S., Alexandria; Lieutenant E. C. Hardwicke, R.A.M.C., Lond.; Messrs. Henderson and Son, St. Andrews; Messrs. Humphreys, Lond.; Dr. R. C. Holt, Manchester; Professor A. D Hirschfelder, Minneapolis, U.S.A.; Messrs. A. Heywood and Son, Manchester; Dr. C. O. Hawthorne, Lond.; Hoffmann-La Roche Chemical Works, Lond., Manager of; Dr. J. T. Hewetson, Birmingham.

I.—International News Co., Lond.; Dr. A. G. Ince, Sturry; Lieutenant-Colonel D. L. Irvine, R.A.M.C., Derby.

J.—Mr. H. B. Jones, Grays; Mrs. W. Johnson, Northallerton; Dr. W. Johnstone, Leicester; Dr. F. H. Jacob, Nottingham; Mr. R. R. James, Lond.; J. F. B.

K.—Dr. H. Kenwood, Lond.; Dr. F. T. Keyt, Hong-Kong; Kurnool, India, District Medical and Sanitary Officer.

L.—Mr. W. Stuart Low, Lond.; Mr. H. R. Ley, Boscombe; Dr. C. Lockyer, Lond.; Mr. J. E. Lane, Lond.; Mr. R Lake, Lond.; Mr. G. Lewis, Folkestone; Staff-Surgeon L. Lindop, R.N., Lond.; Mr. P. Laver, Colchester; Dr. C. Lillingston, Gorleston-on-Sea; Major J. C. H. Leicester, I.M.S., Portland; Dr. W. E. Lee, Lond.; Dr. A. P. Luff, Lond.; L. H.; Lloyd's Bank, Bromsgrove Manager of; Dr. T. Laird, Heywood.

M.—Dr. J. Mortimer, Exeter; Mr. A. McCormick, Newton Stewart; Mr. E. Mahon, Lond.; Colonel Magill, Lond.; Mr. M. S. Mayou, Lond.; Captain L. H. L. Mackenzie, I.M.S., France; Mr. W. Marshall, Cheadle Hulme; Macclesfield General Infirmary, Secretary of; Mr. D. Maguire, Metheringham; Lieutenant-Colonel Morrison, R.A.M.C., Birmingham; M. S.

N.—Messrs. Neale and Wilkinson, Lond.; Northumberland County Asylum, Morpeth, Clerk to the; North Devon Infirmary, Barnstaple, Acting Hon. Secretary of; New Zealand War Contingent Association, Lond., Hon. Treasurer of; National Dental Hospital, Lond., Secretary of.

O.—Captain A. Oppenheimer, Cromarty.

P.—Mr. D. P. Penhallow, Paignton; Messrs. Parker and Son, Oxford.

R.—Mr. H. M. Riley, Leicester; Rhondda Urban District Council, Accountant to the; Dr. J. K. Reid, Morvern.

S.—Messrs. W. H. Smith and Son, Lond.; Salvation Army, Lond.; Dr. P. M. F. Skae, Kirkwall; Dr. A. Wood Smith, Glasgow; Southampton County Borough, Treasurer of; Sports Club, Lond.; Dr. W. T. Scott, Banchory; Sanitas Co., Lond., Secretary of.

T.—Dr. T. F. Tannahill, Queenstown, Cape Province; T. H. W.; Messrs. Thacker and Co., Lond.; Dr. L. Thorne Thorne, Lond.

U.—Captain H. Upcott, R.A.M.C., France.

V.—Mr S. M. B. Vaughan, Cardiff; Mrs. Veitch, Edinburgh; Victoria Hospital, Burnley, Secretary of.

W.—Colonel C. Wallace, France; Dr. A. E. Wells, Cuckfield; Dr. Malcolm Watson, Klang F.M.S.; Dr. J. F. Williams, Melbourne; W. C. H.; Mr. A. Wilson, Lond.; Major C. White, R.A.M.C., France; Dr J.A. Wilson, Glasgow.

Y.—York Medical Society, Sec. of.